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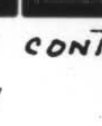
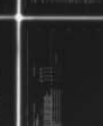
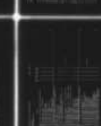
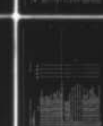
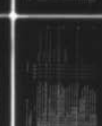
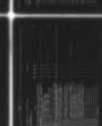
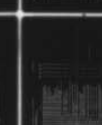
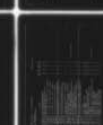
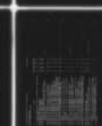
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TELEPHONE EQUIPMENT INSTALLER SPECIALIST, AFSC 36254.(U)
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9 OCCUPATIONAL SURVEY REPORT.
ELECTRONIC PRINCIPLES

Apr-Jun 77

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PREFACE

This report presents a summary of the results of a detailed Air Force Electronic Principles Survey of the Telephone Equipment Installer Specialist, AFSC 36254.

The Electronic Principles Inventory (EPI) was developed by Major Thomas J. O'Connor and Mr. Hendrick W. Ruck and the survey data were analyzed by Captain Frederick B. Bower, Jr. All are members of the Occupational Survey Branch, USAF Occupational Measurement Center, Lackland AFB, Texas.

Computer programs for analyzing the data were designed by Dr. Raymond E. Christal, Occupational and Manpower Research Division, Air Force Human Resources Laboratory (AFHRL), and were written by the Project Analysis and Programming Branch, Computational Sciences Division, AFHRL.

Distribution of this report is made upon request to the USAF Occupational Measurement Center, attention of the Chief, Occupational Survey Branch (OMY), Lackland AFB, Texas 78236.

This report has been reviewed and is approved.

JAMES A. TURNER, JR., Colonel, USAF
Commander
USAF Occupational Measurement Center

WALTER E. DRISKILL, Ph.D.
Chief, Occupational Survey Branch
USAF Occupational Measurement Center

ELECTRONIC PRINCIPLES OCCUPATIONAL SURVEY REPORT
TELEPHONE EQUIPMENT INSTALLATION SPECIALIST
AFSC 36254

INTRODUCTION

✓ This report summarizes the results of the administration of the Electronic Principles Inventory to airmen assigned as Telephone Equipment Installer Specialist (AFSC 36254). The data for this report were collected during the period April through June 1977.

This report describes: (1) development and administration of the survey instrument; and (2) electronic principles used by DAFSC 5-skill level personnel both CONUS and overseas and assigned to selected major commands. ↑

DEVELOPMENT OF THE ELECTRONIC PRINCIPLES INVENTORY (EPI)

The EPI was developed by personnel from the Occupational Survey Branch who were well qualified in theoretical physics and electronics, as well as in task analysis and survey development. Over 300 maintenance personnel from SAC, TAC, ADC, MAC, and AFCS participated in the development of the inventory. Representing the five ATC training centers, electronics experts who averaged 12 years of maintenance experience and four years of electronic principles instruction experience spent several weeks refining the EPI. In addition, personnel at the Electrical Engineering Department of the USAF Academy and the Air Force Human Resources Laboratory were consulted during the development of the inventory.

The final version of the EPI used in this survey contained 1,257 items in 62 subject matter areas covering all electronic principles training given at the five ATC technical training centers. Table 1 lists the 62 subject areas.

ADMINISTRATION

The Electronic Principles Inventory was administered by mail to AFSC 36254 airmen worldwide. Responses from 108 individuals represented 15 percent of the total of all AFSC 36254 personnel. Table 2 shows the percentage distribution by major command of the survey incumbents.

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TABLE 1
EPI SUBJECT AREAS

<u>SEQUENCE OF SUBJECT AREAS</u>	<u>SUBJECT AREA TITLE</u>	<u>BEGINNING ITEM NUMBER</u>	<u>GPSUM PAGE NUMBER</u>
1	MATHEMATICS	A1	2
2	DIRECT CURRENT AND VOLTAGE	A15	2
3	RESISTANCE	A24	2
4	MULTIMETER USES	B52	3
5	ALTERNATING CURRENT	B61	4
6	INDUCTORS AND INDUCTIVE REACTANCE	B67	4
7	CAPACITORS AND CAPACITIVE REACTANCE	C92	5
8	TRANSFORMERS	C128	6
9	MAGNETISM	C171	7
10	RCL CIRCUITS	D185	8
11	SERIES AND PARALLEL RESONANCE (TIME CONSTANTS)	D229	10
12	FILTERS	D239	10
13	COUPLING	E261	11
14	SOLDERING	E273	11
15	RELAYS	E295	12
16	MICROPHONES	F314	12
17	SPEAKERS	F327	13
18	OSCILLOSCOPES	F342	13
19	SEMICONDUCTOR DIODES	G354	13
20	TRANSISTORS	G404	15
21	TRANSISTOR AMPLIFIERS	G428	16
22	SOLID-STATE SPECIAL PURPOSE DEVICES	H477	19
23	POWER SUPPLIES	H483	19
24	OSCILLATORS	H512	19
25	MULTIVIBRATORS	I539	20
26	LIMITERS AND CLAMPERS	I555	21
27	ELECTRON TUBES	I565	21
28	ELECTRON TUBE AMPLIFIERS AND CIRCUITS	J609	22
29	SPECIAL PURPOSE ELECTRON TUBES	J616	23
30	HETERODYNING, MODULATION, AND DEMODULATION	J632	23
31	AM SYSTEMS	K638	23
32	FM SYSTEMS	K666	24

TABLE 1 (CONTINUED)

EPI SUBJECT AREAS

<u>SEQUENCE OF SUBJECT AREAS</u>	<u>SUBJECT AREA TITLE</u>	<u>BEGINNING ITEM NUMBER</u>	<u>GPSUM PAGE NUMBER</u>
33	NUMBERING SYSTEMS	K685	25
34	LOGIC FUNCTIONS	L695	25
35	BOOLEAN EQUATIONS	L708	26
36	COUNTERS	L733	27
37	TIMING CIRCUITS	M757	27
38	USE OF SIGNAL GENERATORS	M769	28
39	MOTORS AND GENERATORS	M779	28
40	METER MOVEMENTS	N808	29
41	SATURABLE REACTORS AND MAGNETIC AMPLIFIERS	N818	29
42	WAVESHAPING CIRCUITS	N834	30
43	SINGLE SIDEBAND SYSTEMS	0845	30
44	PULSE MODULATION SYSTEMS	0875	31
45	ANTENNAS	0914	32
46	TRANSMISSION LINES	P953	34
47	WAVEGUIDES AND CAVITY RESONATORS	P984	35
48	MICROWAVE AMPLIFIERS AND OSCILLATORS	P1034	37
49	REGISTERS	Q1110	39
50	STORAGE DEVICES	Q1117	40
51	DIGITAL TO ANALOG CONVERTERS	Q1126	40
52	PHANTASTRONS	Q1140	41
53	SCHMITT TRIGGERS	R1141	41
54	CABLE FABRICATION	R1144	41
55	INPUT/OUTPUT DEVICES	S1146	41
56	PHOTO SENSITIVE DEVICES	S1149	41
57	SYNCHRONOUS VIBRATIONS (CHOPPER CIRCUITS)	S1150	41
58	INFRARED	T1159	41
59	LASERS	T1186	42
60	DISPLAY TUBES	T1220	43
61	PROGRAMMING	U1234	43
62	DB AND POWER RATIOS	U1255	44

TABLE 2
COMMAND REPRESENTATION OF SURVEY SAMPLE

COMMAND	36254	
	PERCENT ASSIGNED	PERCENT OF SAMPLE
ADC	1	4
ATC	1	1
AFCS	97	82
OTHER	1	13
TOTAL	100	100

Total Assigned - 702
Total Sampled - 108
Percent Sampled - 15%*

*NOTE: Only a 40 percent sampling of this career specialty had been ordered. Of the booklets distributed only 53 percent were returned resulting in the low percent sampled figure.

PRESENTATION OF RESULTS

Personnel responded "yes" or "no" to the 1,257 electronic principles questions as related to their present job. A Group Summary (GPSUM) computer printout is provided in the Appendix portion of this report. Page 1 of the GPSUM lists the four selected groups identified for this report. Pages 2-44 show the percentage of the incumbents responding to the EPI items. The computer program results display the percent members answering "yes" to the subject area questions. The reader can locate a specific subject area by referring to the Appendix page number as listed in Table 1. For example, the Transformers area results are given on page 6 of the GPSUM. The percentage of survey respondents indicating use of specific electronic principles ranged from high in areas such as Soldering (pp. 11-12) and Relays (p. 12) to low in areas such as Limiters and Clampers (p. 21) and Lasers (pp. 42-43). Additional AFSC 362X4 data can be obtained upon request to the Chief, Occupational Survey Branch (OMY).

APPENDIX

PCT NBS RESPONDING 'YES' BY SELECTED GRPS

GPSUM4 PAGE 1

TABULATION OF ELECTRONIC PRINCIPLES UTILIZATION DATA FOR SELECTED GROUPS
IN THE 36254 CAREER FIELD.

REPORTS ON THE FOLLOWING GROUPS WERE REQUESTED

GROUP IDENTITY =	SPC076	ALL AIRMEN DAFSC 36254	CONTAINING	108 MEMBERS.
GROUP IDENTITY =	SPC077	ALL AIRMEN DAFSC 36254	CONTAINING	83 MEMBERS.
GROUP IDENTITY =	SPC078	ALL AIRMEN DAFSC 36254	CONTAINING	25 MEMBERS.
GROUP IDENTITY =	SPC079	ALL AIRMEN DAFSC 36254	CONTAINING	89 MEMBERS.

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

	SPC 076	SPC 077	SPC 078	SPC 079
A 1 AI-01 DO YOU PRESENT JOB, DO YOU USE INSTRUMENTS, SUCH AS METERS OR OSCILLOSCOPES, IN WHICH IT IS NECESSARY TO AMPLIFY OR ATTENUATE VOLTAGE, RESISTANCE, ETC., BY POWERS OF 10.	37	37	36	35
A 2 AI-02 DO YOU USE PUBLICATIONS, SUCH AS A TECHNICAL ORDERS OR MAINTENANCE MANUALS, IN WHICH IT IS NECESSARY FOR YOU TO MULTIPLY OR DIVIDE BY A POWER OF 10 BEFORE YOU CAN APPLY THE INFORMATION FROM THE PUBLICATION IN A USEFUL WAY ON THE JOB.	20	19	24	24
A 3 AI-03 DO YOU REARRANGE AND SOLVE FORMULAS OR EQUATIONS.	9	11	4	9
A 4 AI-04 DO YOU CALCULATE THE SQUARE ROOT OF A QUANTITY.	3	2	4	2
A 5 AI-05 DO YOU SOLVE FOR UNKNOWN QUANTITIES.	6	6	8	6
A 6 AI-06 DO YOU CONVERT NUMBERS TO LOGARITHMS.	0	0	0	0
A 7 AI-07 DO YOU USE LOGARITHM TABLES IN ANY TYPE OF CALCULATIONS.	0	0	0	0
A 8 AI-08 DO YOU SOLVE QUADRATIC EQUATIONS.	4	4	4	3
A 9 AI-09 DO YOU USE THE NATURAL SYSTEM OF LOGARITHMS.	0	0	0	0
A 10 AI-10 DO YOU PERFORM CALCULATIONS ON VECTOR QUANTITIES.	1	1	0	1
A 11 AI-11 DO YOU WORK WITH TRIGONOMETRIC FUNCTIONS SUCH AS SINE, COSINE, OR TANGENT.	2	1	4	1
A 12 AI-12 DO YOU DETERMINE AREAS OF PLANE FIGURES.	2	2	0	1
A 13 AI-13 DO YOU SOLVE OR USE SIMULTANEOUS EQUATIONS.	1	0	4	0
A 14 AI-14 DO YOU SOLVE OR USE PROPORTIONS.	0	0	0	0
A 15 AI-01 DO YOU USE THE TERM VOLTAGE OR VOLT (V).	81	77	92	78
A 16 AI-02 DO YOU USE THE TERM ELECTROMOTIVE FORCE (EMF).	33	35	28	35
A 17 AI-03 DO YOU USE THE TERM OHM.	76	72	88	74
A 18 AI-04 DO YOU USE THE TERM DYNE.	10	8	16	10
A 19 AI-05 DO YOU USE THE TERM AMPERE.	6	4	16	7
A 20 AI-06 DO YOU USE THE TERM NEUTRON.	71	70	76	70
A 21 AI-07 DO YOU USE THE TERM COULOMB.	10	8	16	10
A 22 AI-08 DO YOU USE THE TERM PROTON.	8	6	16	8
A 23 AI-09 DO YOU WORK WITH RESISTORS IN YOUR PRESENT JOB.	11	8	20	10
A 24 AI-02 DO YOU INSPECT RESISTORS.	45	42	56	46
A 25 AI-03 DO YOU CLEAN RESISTORS.	31	29	36	33
A 26 AI-04 DO YOU ADJUST RESISTORS.	7	8	4	9
A 27 AI-05 DO YOU CHECK OHMIC VALUE OR RESISTORS.	15	13	20	15
A 28 AI-06 DO YOU REMOVE OR REPLACE RESISTORS.	43	39	56	42
A 29 AI-07 DO YOU REFER TO TEMPERATURE COEFFICIENTS FOR RESISTORS ON ANY TASKS YOU PERFORM.	35	34	40	36
A 30 AI-08 DO YOU USE OR REFER TO RESISTOR SYMBOLS SUCH AS FIXED RESISTOR SYMBOLS OR TAPPED RESISTOR SYMBOLS.	6	7	4	8
A 31 AI-09 DO YOU IDENTIFY OR CLASSIFY THE RESISTORS YOU WORK WITH AS CARBON, FIXED WIRE, SLIDE TAP, RHEOSTAT, OR POTENTIOMETER.	46	43	56	47
A 32 AI-10 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE OHMIC VALUE OF RESISTANCE.	35	31	48	35
A 33 AI-11 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE OHMIC VALUE OF RESISTANCE.	36	33	48	35

MATHEMATICS

DIRECT CURRENT AND VOLTAGE

RESISTANCE

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

UY-TSK

	SPC 076	SPC 077	SPC 078	SPC 079
A 34 A3-11 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE TOLERANCE.	30	30	28	28
A 35 A3-12 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE FAILURE RATE.	16	14	20	17
A 36 A3-13 DO YOU MAKE DECISIONS IN WHICH YOU MUST DETERMINE HOW TWO OR MORE BATTERIES MUST BE CONNECTED TOGETHER TO ACHIEVE A SPECIFIC VOLTAGE.	39	35	52	40
A 37 A3-14 DO YOU USE OR REFER TO THE SCHEMATIC SYMBOLS WHICH REPRESENT BATTERIES, FUSES, CONDUCTORS, LAMPS, OR SWITCHES	56	53	68	57
A 38 A3-15 DO YOU CALCULATE TOTAL RESISTANCE FOR SERIES RESISTIVE CIRCUITS.	33	31	40	33
A 39 A3-16 DO YOU CALCULATE TOTAL CURRENT FOR SERIES RESISTIVE CIRCUITS.	32	33	32	30
A 40 A3-17 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR SERIES RESISTIVE CIRCUITS.	31	30	32	29
A 41 A3-18 DO YOU CALCULATE POWER DISSIPATION FOR SERIES RESISTIVE CIRCUITS.	23	22	28	21
A 42 A3-19 DO YOU CALCULATE TOTAL RESISTANCE FOR SERIES PARALLEL RESISTIVE CIRCUITS.	26	28	20	22
A 43 A3-20 DO YOU CALCULATE TOTAL CURRENT FOR SERIES PARALLEL RESISTIVE CIRCUITS.	25	28	16	21
A 44 A3-21 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR SERIES PARALLEL RESISTIVE CIRCUITS.	24	27	16	21
A 45 A3-22 DO YOU CALCULATE INDIVIDUAL BRANCH CURRENTS FOR SERIES PARALLEL RESISTIVE CIRCUITS.	23	25	16	21
A 46 A3-23 DO YOU CALCULATE POWER DISSIPATION FOR SERIES PARALLEL RESISTIVE CIRCUITS.	19	20	12	16
A 47 A3-24 DO YOU CALCULATE TOTAL RESISTANCE FOR PARALLEL RESISTIVE CIRCUITS.	23	27	12	21
A 48 A3-25 DO YOU CALCULATE TOTAL CURRENT FOR PARALLEL RESISTIVE CIRCUITS.	22	27	8	20
A 49 A3-26 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR PARALLEL RESISTIVE CIRCUITS.	22	27	8	20
A 50 A3-27 DO YOU CALCULATE INDIVIDUAL BRANCH CURRENTS FOR PARALLEL RESISTIVE CIRCUITS.	20	24	8	19
A 51 A3-28 DO YOU CALCULATE POWER DISSIPATION FOR PARALLEL RESISTIVE CIRCUITS.	14	17	4	12
B 52 B1-01 DO YOU MEASURE RESISTANCE.	66	64	72	65
B 53 B1-02 DO YOU REPAIR OHMMETERS.	6	5	8	2
B 54 B1-03 DO YOU MEASURE VOLTAGE.	74	71	64	75
B 55 B1-04 DO YOU REPAIR VOLTMETERS.	4	4	4	1
B 56 B1-05 DO YOU REPAIR AMMETERS.	4	4	4	1
B 57 B1-06 DO YOU MEASURE CURRENT.	60	60	60	58
B 58 B1-07 DO YOU USE MULTIMETERS.	73	70	84	72
B 59 B1-08 DO YOU DIRECTLY USE A QUANTITY OF CHARGE CALLED A COULOMB.	2	0	6	1
B 60 B1-09 DO YOU READ SCHEMATICS.	82	80	92	81

MULTIMETER USES

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

GPSUM4 PAGE 4

04-TSK

		SPC 076	SPC 077	SPC 078	SPC 079	
B 61	82-01 DO YOU USE OR REFER TO THE TERM EFFECTIVE VOLTAGE (RMS).	20	19	24	18	
B 62	82-02 DO YOU USE OR REFER TO THE TERM PEAK TO PEAK VOLTAGE.	15	13	20	15	
B 63	82-03 DO YOU USE OR REFER TO THE TERM AVERAGE VOLTAGE (DC).	35	34	40	31	
B 64	82-04 DO YOU USE OR REFER TO THE TERM WAVE LENGTH.	6	8	0	7	ALTERNATING CURRENT
B 65	82-05 DO YOU USE OR REFER TO THE TERM FREQUENCY.	26	22	40	24	
B 66	82-06 DO YOU USE OR REFER TO THE TERM INSTANTANEOUS VALUE.	5	5	4	6	
B 67	83-01 DO YOU WORK WITH INDUCTORS OR CIRCUITS CONTAINING INDUCTORS, CHOKES, OR CHOKE COILS IN YOUR PRESENT JOB.	16	14	20	13	
B 68	83-02 DO YOU INSPECT INDUCTORS.	11	11	12	10	
B 69	83-03 DO YOU CLEAN INDUCTORS.	4	4	4	3	
B 70	83-04 DO YOU ADJUST INDUCTORS.	1	1	0	0	
B 71	83-05 DO YOU REMOVE OR REPLACE INDUCTORS.	11	11	12	10	
B 72	83-06 DO YOU USE OR REFER TO INDUCTANCE.	12	12	12	12	
B 73	83-07 DO YOU USE OR REFER TO HENRIES.	8	7	12	9	
B 74	83-08 DO YOU USE OR REFER TO INDUCTIVE REACTANCE.	7	7	8	7	
B 75	83-09 DO YOU USE OR REFER TO COPPER LOSS IN INDUCTORS.	2	2	0	2	
B 76	83-10 DO YOU USE OR REFER TO HYSTERESIS LOSS IN INDUCTORS.	2	2	0	2	
B 77	83-11 DO YOU USE OR REFER TO EDDY CURRENT LOSS IN INDUCTORS.	1	1	0	1	
B 78	83-12 DO YOU USE OR REFER TO THE GENERAL RULE THAT INDUCTANCE IS PROPORTIONAL TO THE SQUARE OF THE NUMBER OF TURNS OF THE COIL.	5	5	4	6	INDUCTORS AND INDUCTIVE REACTANCE
B 79	83-13 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS DIRECTLY PROPORTIONAL TO THE CROSS SECTIONAL AREA OF THE CORE.	2	2	0	2	
B 80	83-14 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS INVERSELY PROPORTIONAL TO ITS LENGTH.	2	2	0	2	
B 81	83-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS DIRECTLY PROPORTIONAL TO THE PERMEABILITY OF THE CORE MATERIAL.	4	4	4	4	
B 82	83-16 DO YOU CALCULATE INDUCTANCE FOR PARTICULAR INDUCTORS USING FORMULAS.	2	2	0	2	
B 83	83-17 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN SERIES.	2	2	0	2	
B 84	83-18 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN PARALLEL.	2	2	0	2	
B 85	83-19 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN SERIES-PARALLEL CIRCUITS.	2	2	0	2	
B 86	83-20 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LAGS VOLTAGE IN AC INDUCTOR CIRCUITS.	4	5	0	4	
B 87	83-21 DO YOU CALCULATE INDUCTIVE REACTANCE.	2	2	0	2	
B 88	83-22 DO YOU USE OR REFER TO THE GENERAL RULE THAT INDUCTIVE REACTANCE IS DIRECTLY PROPORTIONAL TO FREQUENCY.	4	5	0	3	
B 89	83-23 DO YOU WORK WITH POWER INDUCTORS.	6	7	4	8	
B 90	83-24 DO YOU WORK WITH AUDIO FREQUENCY INDUCTORS.	5	5	4	4	
B 91	83-25 DO YOU WORK WITH RADIO FREQUENCY INDUCTORS.	1	1	0	1	

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

GPSUM4 PAGE 5

0Y-TSK

		SPC	SPC	SPC	SPC	SPC		
		076	077	078	079	079		
C 92	CI-01 DO YOU WORK WITH CAPACITORS OR CIRCUITS CONTAINING CAPACITORS IN YOUR PRESENT JOB.	51	47	64	51			
C 93	CI-02 DO YOU INSPECT CAPACITORS.	33	30	44	30			
C 94	CI-03 DO YOU CLEAN CAPACITORS.	13	8	28	13			
C 95	CI-04 DO YOU ADJUST CAPACITORS.	6	7	0	6			
C 96	CI-05 DO YOU TEST CAPACITORS.	28	24	40	28			
C 97	CI-06 DO YOU DISCHARGE CAPACITORS.	25	20	40	24			
C 98	CI-07 DO YOU REMOVE OR REPLACE CAPACITORS.	31	29	40	33			
C 99	CI-08 DO YOU USE OR REFER TO DISTRIBUTED CAPACITANCE.	3	4	0	3			
C 100	CI-09 DO YOU USE OR REFER TO ORBITAL STRESS OF ELECTRONS IN A DIELECTRIC.	2	2	0	2			
C 101	CI-10 DO YOU USE OR REFER TO FARADS, MICROFARADS, OR PICOFARADS.	20	22	16	19			
C 102	CI-11 DO YOU USE OR REFER TO CAPACITANCE.	30	25	44	28			
C 103	CI-12 DO YOU USE OR REFER TO DIELECTRIC CONSTANT	2	2	0	2			
C 104	CI-13 DO YOU USE OR REFER TO WORKING VOLTAGE RATING OF CAPACITORS	17	16	20	17			
C 105	CI-14 DO YOU USE OR REFER TO CAPACITIVE REACTANCE	10	10	12	11			
C 106	CI-15 DO YOU USE OR REFER TO CAPACITOR COLOR CODES	8	7	12	10			
C 107	CI-16 DO YOU WORK WITH CAPACITORS IN DC CIRCUITS	42	37	56	39			
C 108	CI-17 DO YOU WORK WITH CAPACITORS IN AC CIRCUITS	43	37	60	40			
C 109	CI-18 DO YOU WORK WITH CAPACITORS IN CIRCUITS WITH BOTH DC AND AC	38	35	48	36			
C 110	CI-19 DO YOU WORK WITH CAPACITORS IN DON'T REMEMBER WHICH CIRCUITS	14	10	28	15			
C 111	CI-20 DO YOU CALCULATE CAPACITANCE FOR PARTICULAR CAPACITORS USING FORMULAS	3	4	0	3			
C 112	CI-21 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITANCE OF A CAPACITOR IS DIRECTLY PROPORTIONAL TO THE DIELECTRIC CONSTANT	3	4	0	3			
C 113	CI-22 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITANCE OF A CAPACITOR IS INVERSELY PROPORTIONAL TO THE DIELECTRIC THICKNESS	2	2	0	2			
C 114	CI-23 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN SERIES	8	11	0	9			
C 115	CI-24 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN PARALLEL	11	13	4	10			
C 116	CI-25 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN SERIES-PARALLEL CIRCUITS	11	11	12	12			
C 117	CI-26 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT DOES NOT FLOW THROUGH CAPACITORS, IT ONLY APPEARS TO DO SO	15	13	20	12			
C 118	CI-27 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LEADS VOLTAGE IN AC CAPACITOR CIRCUITS	11	12	8	11			
C 119	CI-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITIVE REACTANCE IS INVERSELY PROPORTIONAL TO FREQUENCY	6	6	8	7			
C 120	CI-29 DO YOU CALCULATE CAPACITIVE REACTANCE	6	5	8	7			

CAPACITORS AND CAPACITIVE REACTANCE

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

	SPC 076	SPC U77	SPC 078	SPC 079
C 121 C1-30 DO YOU WORK WITH ROTOR-STATOR (VARIABLE) CAPACITORS	13	12	16	16
C 122 C1-31 DO YOU WORK WITH COMPRESSION (TRIMMER) CAPACITORS	4	5	0	4
C 123 C1-32 DO YOU WORK WITH ELECTROLYTIC (FIXED) CAPACITORS	25	25	24	25
C 124 C1-33 DO YOU WORK WITH PAPER (FIXED) CAPACITORS	23	23	24	20
C 125 C1-34 DO YOU WORK WITH MICA (FIXED) CAPACITORS	17	16	20	18
C 126 C1-35 DO YOU WORK WITH CERAMIC (FIXED) CAPACITORS	25	24	28	25
C 127 C1-36 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF CAPACITORS	18	14	28	17
C 128 C2-01 DO YOU WORK WITH TRANSFORMERS IN YOUR PRESENT JOB	20	17	32	20
C 129 C2-02 DO YOU INSPECT TRANSFORMERS	19	14	32	18
C 130 C2-03 DO YOU CLEAN TRANSFORMERS	11	5	32	12
C 131 C2-04 DO YOU ADJUST TRANSFORMERS	6	4	12	4
C 132 C2-05 DO YOU TROUBLESHOOT TRANSFORMERS	16	12	28	15
C 133 C2-06 DO YOU REMOVE OR REPLACE COMPLETE TRANSFORMERS	19	13	36	19
C 134 C2-07 DO YOU REMOVE OR REPLACE TRANSFORMER PARTS, SUCH AS THE PRIMARY WINDING	5	1	16	6
C 135 C2-08 DO YOU MAKE A DISTINCTION BETWEEN MUTUAL INDUCTANCE AND MUTUAL INDUCTANCE (M)	1	1	0	1
C 136 C2-09 DO YOU USE THE SYMBOL FOR MUTUAL INDUCTANCE, M	0	0	0	0
C 137 C2-10 DO YOU REFER TO OR USE THE COEFFICIENT OF COUPLING WHEN WORKING WITH TRANSFORMERS	0	0	0	0
C 138 C2-11 DO YOU CALCULATE TURNS RATIOS FOR TRANSFORMERS USING CURRENT OR VOLTAGE RATIOS	2	2	0	2
C 139 C2-12 DO YOU REFER TO REFLECTED IMPEDANCE WHEN WORKING WITH TRANSFORMERS	1	1	0	1
C 140 C2-13 DO YOU CALCULATE IMPEDANCE INTERACTIONS FOR TRANSFORMERS	0	0	0	0
C 141 C2-14 DO YOU WORK WITH AUTOTRANSFORMERS	0	0	0	0
C 142 C2-15 DO YOU WORK WITH POWER TRANSFORMERS	21	16	40	20
C 143 C2-16 DO YOU WORK WITH AUDIO TRANSFORMERS	6	7	4	6
C 144 C2-17 DO YOU WORK WITH RADIO FREQUENCY TRANSFORMERS	2	2	0	1
C 145 C2-18 DO YOU WORK WITH DON'T REMEMBER WHAT TYPE OF TRANSFORMERS	6	2	16	6
C 146 C2-19 DO YOU CHECK TRANSFORMERS FOR OPEN WINDINGS BY MEASURING RESISTANCE	14	13	16	12
C 147 C2-20 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING RESISTANCE	11	10	16	10
C 148 C2-21 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING OUTPUT VOLTAGES	15	13	20	13
C 149 C2-22 DO YOU MEASURE RESISTANCE OF TRANSFORMER WINDINGS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR STEP-DOWN TURNS RATIO	8	8	8	8
C 150 C2-23 DO YOU MEASURE OUTPUT VOLTAGE OF TRANSFORMERS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR STEP-DOWN TURNS RATIO	7	6	12	7
C 151 C2-24 DO YOU REFER TO BASIC TRANSFORMER SCHEMATIC SYMBOLS FOR TRANSFORMERS	17	16	20	17

TRANSFORMERS

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

GPSUM4 PAGE 7

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

SPC SPC SPC SPC
076 077 078 079

0Y-TSK

C 152 C2-25 DO YOU REFER TO MULTIPLE SECONDARY-WINDINGS SCHEMATIC SYMBOLS FOR TRANSFORMERS

C 153 C2-26 DO YOU REFER TO MULTIPLE TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS

C 154 C2-27 DO YOU REFER TO CENTER TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS

C 155 C2-28 DO YOU REFER TO AIR CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS

C 156 C2-29 DO YOU REFER TO IRON CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS

C 157 C2-30 DO YOU REFER TO COMBINATIONS OF THE ABOVE SCHEMATIC SYMBOLS FOR TRANSFORMERS

C 158 C2-31 DO YOU DETERMINE PHASE RELATIONSHIPS BETWEEN SECONDARY AND PRIMARY VOLTAGES OF TRANSFORMERS USING SCHEMATIC SYMBOLS

C 159 C2-32 DO YOU DETERMINE OR REFER TO THE TYPE OF CORE IN TRANSFORMERS YOU WORK WITH

C 160 C2-33 DO YOU REFER TO OR USE THE GENERAL RULE THAT THE TURNS RATIO OF A TRANSFORMER IS EQUAL TO THE VOLTAGE RATIO

C 161 C2-34 DO YOU USE OR REFER TO STEP-UP OR STEP-DOWN RATIOS FOR TRANSFORMERS

C 162 C2-35 DO YOU CALCULATE VOLTAGE RATIOS FOR TRANSFORMERS USING TURNS RATIOS

C 163 C2-36 DO YOU CALCULATE CURRENT RATIOS FOR TRANSFORMERS USING TURNS RATIOS

C 164 C2-37 DOES YOUR JOB INVOLVE ANY TASKS DEALING WITH THREE PHASE TRANSFORMERS

C 165 C2-38 DO YOU INSPECT THREE PHASE TRANSFORMERS

C 166 C2-39 DO YOU CLEAN OR LUBRICATE THREE PHASE TRANSFORMERS

C 167 C2-40 DO YOU ADJUST THREE PHASE TRANSFORMERS

C 168 C2-41 DO YOU TROUBLESHOOT THREE PHASE TRANSFORMERS

C 169 C2-42 DO YOU REMOVE OR REPLACE COMPLETE THREE PHASE TRANSFORMERS

C 170 C2-43 DO YOU REMOVE OR REPLACE THREE PHASE TRANSFORMER PARTS SUCH AS WINDINGS

C 171 C3-01 DO YOU USE OR REFER TO PERMANENT MAGNETS

C 172 C3-02 DO YOU USE OR REFER TO TEMPORARY MAGNETS

C 173 C3-03 DO YOU USE OR REFER TO RETENTIVITY OF MAGNETIC MATERIALS

C 174 C3-04 DO YOU USE OR REFER TO RELUCTANCE OF MAGNETIC MATERIALS

C 175 C3-05 DO YOU USE OR REFER TO PERMEABILITY OF MAGNETIC MATERIALS

C 176 C3-06 DO YOU USE OR REFER TO RESIDUAL MAGNETISM

C 177 C3-07 DO YOU USE OR REFER TO MAGNETIC LINES OF FORCE OR FLUX

C 178 C3-08 DO YOU USE OR REFER TO WEBER'S THEORY OF MAGNETISM

MAGNETISM

18	16	24	18
11	10	16	11
14	12	20	15
14	13	16	15
16	14	20	16
15	12	24	15
6	6	4	7
4	4	4	4
0	0	0	0
6	6	8	7
2	2	0	2
2	2	0	2
1	1	0	1
1	1	0	1
0	0	0	0
0	0	0	0
1	1	0	1
1	1	0	1
1	1	0	1
28	24	40	28
19	20	12	18
6	7	0	6
6	7	0	6
6	8	0	7
7	8	4	8
12	12	12	13
4	4	4	4

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

GPSUM4 PAGE 8

0Y-TSK

SPC SPC SPC SPC
076 077 078 079

C 179 C3-09 DO YOU USE OR REFER TO DOMAIN THEORY OF MAGNETISM
C 180 C3-10 DO YOU USE OR REFER TO MAGNETIC INDUCTION
C 181 C3-11 DO YOU USE OR REFER TO FLUX DENSITY
C 182 C3-12 DO YOU USE OR REFER TO THE GENERAL RULE THAT FOR
MAGNETIC POLES, LIKE POLES REPEL AND UNLIKE POLES ATTRACT
C 183 C3-13 DO YOU USE THE LEFT HAND THUMB RULE TO FIND THE
DIRECTION OF MAGNETIC FIELDS ABOUT STRAIGHT WIRES
C 184 C3-14 DO YOU USE THE LEFT HAND THUMB RULE TO FIND THE NORTH
POLE OF A CURRENT CARRYING COIL
D 185 D1-01 DO YOU WORK WITH RCL, LR, RCL CIRCUITS IN YOUR
PRESENT JOB
D 186 D1-02 DO YOU USE OR REFER TO VECTORS WHEN WORKING WITH RCL
CIRCUITS
D 187 D1-03 DO YOU USE OR REFER TO PYTHAGOREAN THEOREM WHEN
WORKING WITH RCL CIRCUITS
D 188 D1-04 DO YOU USE OR REFER TO SINE WHEN WORKING WITH RCL
CIRCUITS
D 189 D1-05 DO YOU USE OR REFER TO COSINE WHEN WORKING WITH RCL
CIRCUITS
D 190 D1-06 DO YOU USE OR REFER TO TANGENT WHEN WORKING WITH RCL
CIRCUITS
D 191 D1-07 DO YOU USE OR REFER TO WATTS WHEN WORKING WITH RCL
CIRCUITS
D 192 D1-08 DO YOU USE OR REFER TO TRUE POWER (PT) WHEN WORKING
WITH RCL CIRCUITS
D 193 D1-09 DO YOU USE OR REFER TO MAXIMUM POWER (PM) WHEN
WORKING WITH RCL CIRCUITS
D 194 D1-10 DO YOU USE OR REFER TO AVERAGE POWER (PAVE) WHEN
WORKING WITH RCL CIRCUITS
D 195 D1-11 DO YOU USE OR REFER TO APPARENT POWER (PA) WHEN
WORKING WITH RCL CIRCUITS
D 196 D1-12 DO YOU USE OR REFER TO POWER FACTOR (PF) WHEN WORKING
WITH RCL CIRCUITS
D 197 D1-13 DO YOU USE OR REFER TO RESONANT CIRCUITS WHEN
WORKING WITH RCL CIRCUITS
D 198 D1-14 DO YOU USE OR REFER TO BANDWIDTH WHEN WORKING WITH
RCL CIRCUITS
D 199 D1-15 DO YOU USE OR REFER TO SELECTIVITY WHEN WORKING WITH
RCL CIRCUITS
D 200 D1-16 DO YOU USE OR REFER TO RESONANT FREQUENCY WHEN
WORKING WITH RCL CIRCUITS
D 201 D1-17 DO YOU USE OR REFER TO HALF POWER POINTS WHEN
WORKING WITH RCL CIRCUITS
D 202 D1-18 DO YOU USE OR REFER TO BANDPASS REGION WHEN WORKING
WITH RCL CIRCUITS
D 203 D1-19 DO YOU USE OR REFER TO CIRCUIT Q WHEN WORKING WITH
RCL CIRCUITS

RCL CIRCUITS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

	SPC 076	SPC 077	SPC 078	SPC 079
D 204 D1-20 DO YOU USE OR REFER TO TANK CIRCUITS WHEN WORKING WITH RCL CIRCUITS	1	1	0	1
D 205 D1-21 DO YOU DETERMINE VALUES OF TRIGONOMETRIC FUNCTIONS USING FORMULAS	1	1	0	1
D 206 D1-22 DO YOU DRAW VOLTAGE, CURRENT, OR IMPEDANCE VECTOR DIAGRAMS FOR CIRCUITS	1	1	0	1
D 207 D1-23 DO YOU CALCULATE TOTAL IMPEDANCE FOR CAPACITIVE CIRCUITS	2	2	0	2
D 208 D1-24 DO YOU CALCULATE PHASE ANGLES BETWEEN IMPEDANCE AND RESISTANCE IN CAPACITIVE CIRCUITS	1	1	0	1
D 209 D1-25 DO YOU CALCULATE TOTAL IMPEDANCE FOR SERIES RCL CIRCUITS	2	2	0	2
D 210 D1-26 DO YOU CALCULATE IMPEDANCE ANGLES FOR SERIES RCL CIRCUITS	2	2	0	2
D 211 D1-27 DO YOU CALCULATE APPARENT POWER (PA) FOR SERIES RCL CIRCUITS	0	0	0	0
D 212 D1-28 DO YOU CALCULATE TRUE POWER (PT) FOR SERIES RCL CIRCUITS	1	1	0	1
D 213 D1-29 DO YOU CALCULATE POWER FACTORS (PF) FOR SERIES RCL CIRCUITS	1	1	0	1
D 214 D1-30 DO YOU CALCULATE TOTAL CURRENT FOR PARALLEL RCL CIRCUITS	2	2	0	2
D 215 D1-31 DO YOU CALCULATE IMPEDANCE ANGLES FOR PARALLEL RCL CIRCUITS	1	1	0	1
D 216 D1-32 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING THE ASSUMED VOLTAGE METHOD	2	2	0	2
D 217 D1-33 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING OHM'S LAW	3	4	0	3
D 218 D1-34 DO YOU CHECK CAPACITORS USING OHMMETERS	9	11	4	7
D 219 D1-35 DO YOU CHECK CAPACITORS USING SUBSTITUTION	5	5	4	3
D 220 D1-36 DO YOU CHECK INDUCTORS USING OHMMETERS	8	10	4	6
D 221 D1-37 DO YOU CHECK INDUCTORS USING SUBSTITUTION	5	5	4	3
D 222 D1-38 DO YOU USE OH REFER TO THE GENERAL RULE THAT THETA = 0, PF = 1, AND PA = PT FOR RESONANT CIRCUITS	1	1	0	1
D 223 D1-39 DO YOU CALCULATE RESONANT FREQUENCIES FOR RCL CIRCUITS	1	1	0	1
D 224 D1-40 DO YOU USE OR REFER TO THE GENERAL RULE THAT IMPEDANCE IS MINIMUM AND CURRENT MAXIMUM AT THE RESONANT FREQUENCY FOR SERIES RCL CIRCUITS	1	1	0	1
D 225 D1-41 DO YOU USE OR REFER TO THE GENERAL RULE THAT LINE CURRENT IS MINIMUM AND IMPEDANCE MAXIMUM AT RESONANT FREQUENCY FOR PARALLEL RCL CIRCUITS	1	1	0	1
D 226 D1-42 DO YOU USE OR REFER TO THE GENERAL RULE THAT HALF POWER POINTS ARE AT 70.7 PERCENT OF THE PEAK CURRENT VALUE	2	2	0	0
D 227 D1-43 DO YOU USE OR REFER TO THE GENERAL RULE THAT BANDWIDTH IS INVERSELY PROPORTIONAL TO Q	0	0	0	0
D 228 D1-44 DO YOU DETERMINE HOW CHANGES IN FREQUENCY, RESISTANCE, CAPACITANCE, OR INDUCTANCE WILL AFFECT CURRENT OR PHASE ANGLES FOR RCL CIRCUITS	1	1	0	1

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

SPC SPC SPC SPC
076 077 078 079

0 229 02-01 IN YOUR PRESENT JOB, DO YOU WORK WITH, USE, OR REFER
TO SERIES OR PARALLEL RESONANT CIRCUITS OR TIME CONSTANTS
0 230 02-02 DO YOU WORK WITH, USE, OR REFER TO TIME CONSTANTS
0 231 02-03 DO YOU WORK WITH, USE, OR REFER TO AVAILABLE VOLTAGE
0 232 03-04 DO YOU WORK WITH, USE, OR REFER TO TRANSIENT
INTERVALS
0 233 02-05 DO YOU USE OR REFER TO THE GENERAL RULE THAT A
CAPACITOR IS FULLY CHARGED (OR DISCHARGED) AFTER FIVE (5)
TIME CONSTANTS (TC)
0 234 02-06 DO YOU USE OR REFER TO UNIVERSAL TIME CONSTANT CHARTS
0 235 02-07 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE
CIRCUIT CURRENT OR COMPONENT VOLTAGES AFTER A SPECIFIC
TIME FOR RC OR LR CIRCUITS
0 236 02-08 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE THE
TIME REQUIRED FOR CIRCUIT CURRENT OR COMPONENT VOLTAGES TO
REACH SPECIFIC VALUES FOR RC OR LR CIRCUITS
0 237 02-09 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE
COMPONENT VALUES REQUIRED FOR CIRCUIT CURRENT AND
COMPONENT VOLTAGES TO REACH SPECIFIC VALUES IN SPECIFIC
TIMES
0 238 02-10 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT
IN LR CIRCUITS REACHES ITS MINIMUM VALUE (OR ZERO) AFTER
FIVE (5) TIME CONSTANTS

SERIES AND PARALLEL RESONANCE
(TIME CONSTANTS)

0 239 03-01 DO YOU WORK WITH CIRCUITS USED AS FILTERS IN YOUR

PRESENT JOB

0 240 03-02 DO YOU INSPECT FILTER CIRCUITS
0 241 03-03 DO YOU CLEAN FILTER CIRCUITS
0 242 03-04 DO YOU ALIGN OR ADJUST FILTER CIRCUITS
0 243 03-05 DO YOU TROUBLESHOOT TO THE FILTER CIRCUIT LEVEL
0 244 03-06 DO YOU TROUBLESHOOT TO COMPONENT PARTS
0 245 03-07 DO YOU REMOVE OR REPLACE THE COMPLETE FILTER CIRCUIT
0 246 03-08 DO YOU REMOVE OR REPLACE FILTER CIRCUIT COMPONENT
PARTS

PARTS

0 247 03-09 DO YOU WORK WITH LOW PASS FILTERS
0 248 03-10 DO YOU WORK WITH HIGH PASS FILTERS
0 249 03-11 DO YOU WORK WITH BANDPASS FILTERS
0 250 03-12 DO YOU WORK WITH BAND-REJECT FILTERS
0 251 03-13 DON'T REMEMBER WHICH TYPE OF FILTER YOU WORK WITH
0 252 03-14 DO YOU WORK WITH L-SECTION FILTER CONFIGURATION
0 253 03-15 DO YOU WORK WITH T-SECTION FILTER CONFIGURATION
0 254 03-16 DO YOU WORK WITH PI-SECTION FILTER CONFIGURATION
0 255 03-17 DON'T REMEMBER WHICH TYPE FILTER CONFIGURATION
0 256 03-18 DO THE FILTERS YOU WORK WITH USE PARALLEL RESONANT
CIRCUITS

CIRCUITS

0 257 03-19 DO THE FILTERS YOU WORK WITH USE SERIES-PARALLEL

CIRCUITS

CIRCUITS

0 258 03-20 DO THE FILTERS YOU WORK WITH USE SERIES RESONANT

CIRCUITS

17 16 20 16

10 10 12 10

4 2 8 4

3 2 4 3

8 7 12 8

6 6 8 7

13 12 16 13

8 8 8 10

9 8 12 9

6 7 0 7

4 4 4 4

8 10 4 7

3 2 4 3

2 1 4 2

2 1 4 2

9 10 8 9

3 4 0 2

6 6 4 4

4 5 0 3

FILTERS

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMINGSPC SPC SPC SPC
076 077 078 079

DY-TSK

D 259 D3-21 DON'T REMEMBER WHICH TYPE OF BASIC CIRCUIT
D 260 D3-22 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE
CAPACITANCE OR INDUCTANCE VALUES REQUIRED FOR SPECIFIC
FILTERS

E 261 E1-01 DO YOU WORK WITH COUPLING DEVICES IN YOUR PRESENT JOB
E 262 E1-02 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO
THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH RC
COUPLING

E 263 E1-03 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO
THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH
IMPEDANCE COUPLING

E 264 E1-04 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO
THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH
TRANSFORMER COUPLING

E 265 E1-05 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS
WHICH PERFORM RC COUPLING

E 266 E1-06 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS
WHICH PERFORM IMPEDANCE COUPLING

E 267 E1-07 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS
WHICH PERFORM TRANSFORMER COUPLING

E 268 E1-08 DO YOU WORK WITH DIRECTLY COUPLED CIRCUITS

E 269 E1-09 DO YOU WORK WITH CAPACITIVE-RESISTIVE COUPLED
CIRCUITS

E 270 E1-10 DO YOU WORK WITH CAPACITIVE-INDUCTIVE COUPLED
CIRCUITS

E 271 E1-11 DO YOU WORK WITH TRANSFORMER COUPLED CIRCUITS

E 272 E1-12 DON'T REMEMBER WHICH TYPE OF COUPLING CIRCUITS

E 273 E2-01 IN YOUR PRESENT JOB, DO YOU PERFORM SOLDERING
TECHNIQUES OR INSPECT OR EVALUATE SOLDERED CONNECTIONS

E 274 E2-02 DO YOU SELECT TYPE OF SOLDER TO USE

E 275 E2-03 DO YOU ADD FLUX TO CONNECTIONS

E 276 E2-04 DO YOU CLEAN CONNECTIONS USING SOLVENTS

E 277 E2-05 DO YOU STRIP INSULATION FROM WIRES

E 278 E2-06 DO YOU CONNECT OR DISCONNECT HEAT SINKS

E 279 E2-07 DO YOU BEND OR SHAPE WIRES OR LEADS

E 280 E2-08 DO YOU CUT WIRES

E 281 E2-09 DO YOU FILE OR SHAPE SOLDERING IRON TIPS

E 282 E2-10 DO YOU TIN SOLDERING IRON TIPS

E 283 E2-11 DO YOU CLEAN SOLDERING IRON TIPS

E 284 E2-12 DO YOU CLEAN ELECTRICAL SURFACES USING ERASERS

E 285 E2-13 DO YOU TIN OR PRE-TIN CONDUCTORS

E 286 E2-14 DO YOU INSPECT SOLDERED CONNECTIONS

E 287 E2-15 DO YOU DESOLDER CONNECTIONS BY WICKING

E 288 E2-16 DO YOU DESOLDER CONNECTIONS USING VACUUM DESOLDERING
TOOLS

E 289 E2-17 DO YOU CUT COMPONENT LEADS TO REMOVE COMPONENTS

E 290 E2-18 DO YOU CRUSH COMPONENTS FOR REMOVAL

COUPLING

SOLDERING

PCT MBS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	SPC	SPC	SPC	SPC	SPC
	076	077	078	079	
E 291 E2-19 DO YOU MAKE HARDWIRE CONNECTIONS	71	71	72	70	
E 292 E2-20 DO YOU MAKE PRINTED CIRCUIT BOARD CONNECTIONS	18	17	20	17	
E 293 E2-21 DO YOU SOLDER PASSIVE COMPONENTS SUCH AS RESISTORS OR CAPACITORS ON PRINTED CIRCUIT BOARDS	14	12	20	13	
E 294 E2-22 DO YOU SOLDER ACTIVE COMPONENTS SUCH AS SOLID-STATE DIODES OR TRANSISTORS ON PRINTED CIRCUIT BOARDS	9	8	12	10	
E 295 E3-01 DO YOU WORK WITH RELAYS ON YOUR PRESENT JOB	80	80	80	80	
E 296 E3-02 DO YOU ADJUST RELAYS	49	45	80	71	
E 297 E3-03 DO YOU CLEAN RELAYS	81	82	80	82	
E 298 E3-04 DO YOU INSPECT RELAYS	81	81	84	82	
E 299 E3-05 DO YOU REMOVE OR REPLACE COMPLETE RELAYS	69	67	76	72	
E 300 E3-06 DO YOU REMOVE OR REPLACE PARTS OR RELAYS	38	40	32	37	
E 301 E3-07 DO YOU TROUBLESHOOT RELAYS	80	80	80	80	
E 302 E3-08 DO YOU STRAIGHTEN RELAY CONTACTS	77	76	80	76	
E 303 E3-09 DO YOU PERFORM TASKS ON RELAY CONTACTS	81	80	84	81	
E 304 E3-10 DO YOU PERFORM TASKS ON RELAY COILS	19	17	24	18	
E 305 E3-11 DO YOU PERFORM TASKS ON RELAY COILS	24	23	28	22	
E 306 E3-12 DO YOU PERFORM TASKS ON RELAY ARMATURES	34	35	32	33	
E 307 E3-13 DO YOU PERFORM TASKS ON RELAY SPRINGS	48	47	52	49	
E 308 E3-14 DO YOU USE OR REFER TO SINGLE POLE, SINGLE THROW (SPST), NORMALLY OPER (NO) SCHEMATIC SYMBOLS FOR RELAYS	49	47	56	49	
E 309 E3-15 DO YOU USE OR REFER TO SINGLE POLE, SINGLE THROW (SPST), NORMALLY CLOSED (NC) SCHEMATIC SYMBOLS FOR RELAYS	47	46	52	47	
E 310 E3-16 DO YOU USE OR REFER TO SINGLE POLE, DOUBLE THROW (SPDT) SCHEMATIC SYMBOLS FOR RELAYS	46	46	48	46	
E 311 E3-17 DO YOU USE OR REFER TO DOUBLE POLE, DOUBLE THROW (DPDT) SCHEMATIC SYMBOLS FOR RELAYS	45	46	44	45	
E 312 E3-18 DO YOU USE OR REFER TO OTHER RELAY SYMBOLS SCHEMATIC SYMBOLS FOR RELAYS	62	60	68	63	
E 313 E3-19 DO YOU CHECK ELECTRICAL CONTINUITY OF COILS BY MEASURING RESISTANCE	33	33	36	34	
F 314 F1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH MICROPHONES	18	19	12	16	
F 315 F1-02 DO YOU INSPECT MICROPHONES	16	17	12	13	
F 316 F1-03 DO YOU CLEAN MICROPHONES	11	12	8	11	
F 317 F1-04 DO YOU OPERATE MICROPHONES	16	18	8	13	
F 318 F1-05 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS BUT DO NOT TROUBLESHOOT DOWN TO COMPONENT PARTS OR MICROPHONES	12	12	12	9	
F 319 F1-06 DO YOU TROUBLESHOOT DOWN TO MICROPHONE PARTS	6	8	0	4	
F 320 F1-07 DO YOU REMOVE OR REPLACE COMPLETE MICROPHONES	15	16	12	12	
F 321 F1-08 DO YOU REMOVE OR REPLACE MICROPHONE PARTS	6	7	0	6	
F 322 F1-09 DO YOU PERFORM TASKS ON CARBON MICROPHONES	16	17	12	13	
F 323 F1-10 DO YOU PERFORM TASKS ON CAPACITOR MICROPHONES	4	5	0	4	
F 324 F1-11 DO YOU PERFORM TASKS ON CRYSTAL MICROPHONES	3	4	0	2	
F 325 F1-12 DO YOU PERFORM TASKS ON DYNAMIC MICROPHONES	3	2	4	3	
F 326 F1-13 DO YOU PERFORM TASKS ON VELOCITY RIBBON MICROPHONES	1	1	0	1	

RELAYS

MICROPHONES

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

SPC SPC SPC SPC
076 077 078 079F 327 F2-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING
WITH SPEAKERS

F 328 F2-02 DO YOU INSPECT SPEAKERS

F 329 F2-03 DO YOU CLEAN SPEAKERS

F 330 F2-04 DO YOU OPERATE SPEAKERS

F 331 F2-05 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE
CONNECTIONS BUT DO NOT TROUBLESHOOT DOWN TO COMPONENT
PARTS OF SPEAKERS

F 332 F2-06 DO YOU TROUBLESHOOT DOWN TO SPEAKER PARTS

F 333 F2-07 DO YOU REMOVE OR REPLACE COMPLETE SPEAKERS

F 334 F2-08 DO YOU REMOVE OR REPLACE SPEAKER PARTS

F 335 F2-09 DO YOU PERFORM ANY TASKS ON SPEAKER CONES

F 336 F2-10 DO YOU PERFORM ANY TASKS ON SPEAKER SPIDERS

F 337 F2-11 DO YOU PERFORM ANY TASKS ON SPEAKER FIELD COILS

F 338 F2-12 DO YOU PERFORM ANY TASKS ON SPEAKER VOICE COILS

F 339 F2-13 DO YOU PERFORM ANY TASKS ON SPEAKER PERMANENT MAGNETS

F 340 F2-14 DO YOU PERFORM ANY TASKS ON SPEAKER ELECTROMAGNETS

F 341 F2-15 DO YOU PERFORM ANY TASKS ON SPEAKER SOFT IRON CORES

F 342 F3-01 DO YOU USE OSCILLOSCOPES IN YOUR PRESENT JOB

F 343 F3-02 DO YOU USE OSCILLOSCOPES TO PERFORM OPERATIONAL
CHECKSF 344 F3-03 DO YOU USE OSCILLOSCOPES TO PERFORM ALIGNMENTS OR
ADJUSTMENTSF 345 F3-04 DO YOU USE OSCILLOSCOPES TO TROUBLESHOOT ELECTRONIC
CIRCUITS

F 346 F3-05 DO YOU USE OSCILLOSCOPES TO MEASURE FREQUENCY

F 347 F3-06 DO YOU USE OSCILLOSCOPES TO MEASURE TIME

F 348 F3-07 DO YOU USE OSCILLOSCOPES TO OBSERVE LISAJOUS PATTERNS

F 349 F3-08 DO YOU USE OSCILLOSCOPES TO OBSERVE SIGNALS WHILE
UTILIZING ATTENUATOR PROBESF 350 F3-09 DO YOU USE OSCILLOSCOPES TO MAKE FREQUENCY OR TIME
MEASUREMENTS USING DELAY TIME MULTIPLIERS

F 351 F3-10 DO YOU USE OSCILLOSCOPES TO MEASURE AC VOLTAGE

F 352 F3-11 DO YOU USE OSCILLOSCOPES TO MEASURE OR OBSERVE
SIGNALS AFTER FIRST ADJUSTING THE GAIN AND DC BAL CONTROLS

F 353 F3-12 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE

G 354 G1-01 DO YOU WORK WITH SEMICONDUCTOR DIODES IN YOUR PRESENT
JOB

G 355 G1-02 DO YOU INSPECT DIODES

G 356 G1-03 DO YOU REMOVE OR REPLACE DIODES

G 357 G1-04 DO YOU CHECK DIODES USING AN INSTRUMENT

G 358 G1-05 DO YOU USE ENERGY LEVEL DIAGRAMS IN YOUR WORK WITH
DIODESG 359 G1-06 DO YOU USE PN JUNCTION DIODE CHARACTERISTIC CURVES,
TOGETHER WITH VALUES OF FORWARD AND REVERSE BIAS VOLTAGE,
TO COMPUTE FORWARD OR REVERSE LIAS RESISTANCEG 360 G1-07 DO YOU COMPUTE FORWARD OR REVERSE BIAS RESISTANCE FOR
DIODES

SPEAKERS

OSCILLOSCOPES

SEMICONDUCTOR DIODES

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMINGSPC SPC SPC SPC
076 077 078 079

DY-TSK

6 361 G1-08 DO YOU USE OR REFER TO THE GENERAL RULE THAT TEMPERATURE CAN AFFECT THE OPERATION OF DIODES

6 362 G1-09 DO YOU IDENTIFY SEMICONDUCTOR DIODES AS OPPOSED TO OTHER ELECTRONIC COMPONENTS, SUCH AS RESISTORS, BASED ON THEIR PHYSICAL APPEARANCE

6 363 G1-10 DO YOU REFER TO OR DO YOU DETERMINE THE GENERAL EFFECTS OF DOPING ON CURRENT FLOW

6 364 G1-11 DO YOU USE OR REFER TO MEASUREMENTS OF FORWARD BIAS RESISTANCE

6 365 G1-12 DO YOU USE OR REFER TO DIODE COLOR CODING

6 366 G1-13 DO YOU USE OR REFER TO CENTRIFUGAL FORCE OF AN ELECTRON IN ORBIT AROUND A NUCLEUS

6 367 G1-14 DO YOU USE OR REFER TO CENTRIPETAL FORCE OF AN ELECTRON IN ORBIT AROUND A NUCLEUS

6 368 G1-15 DO YOU USE OR REFER TO DIODE NUMBERING SYSTEM, SUCH AS IN 538

6 369 G1-16 DO YOU USE OR REFER TO KINETIC ENERGY OF AN ELECTRON MOVING IN ORBIT

6 370 G1-17 DO YOU USE OR REFER TO POTENTIAL ENERGY OF AN ELECTRON MOVING IN ORBIT

6 371 G1-18 DO YOU USE OR REFER TO MEASUREMENTS OF REVERSE BIAS RESISTANCE

6 372 G1-19 DO YOU USE OR REFER TO NUMBER OF ELECTRONS IN A PARTICULAR SHELL OR ORBIT

6 373 G1-20 DO YOU USE OR REFER TO PERMISSIBLE ENERGY LEVELS OF AN ORBITING ELECTRON

6 374 G1-21 DO YOU USE OR REFER TO FORBIDDEN ENERGY LEVELS OF AN ORBITING ELECTRON

6 375 G1-22 DO YOU USE OR REFER TO VALENCE ELECTRONS (THOSE IN THE OUTERMOST SHELL)

6 376 G1-23 DO YOU USE OR REFER TO ATOMIC NUMBER (TOTAL NUMBER OF ELECTRONS IN ATOM)

6 377 G1-24 DO YOU USE OR REFER TO SYMBOLS ON THE DIODE WHICH INDICATE THE CATHODE END

6 378 G1-25 DO YOU NEED TO KNOW WHICH MATERIALS ARE USED IN THE CONSTRUCTION OF DIODES SUCH AS GERMANIUM OR SILICON

6 379 G1-26 DO YOU NEED TO KNOW THAT SEMICONDUCTORS HAVE NEGATIVE TEMPERATURE COEFFICIENTS OF RESISTANCE (AS TEMPERATURE INCREASES RESISTANCE DECREASES)

6 380 G1-27 DO YOU USE OR REFER TO PN JUNCTION DIODE CHARACTERISTIC CURVES, SUCH AS VOLTAGE - CURRENT CHARACTERISTIC CURVES (PERHAPS YOU DO THIS TO IDENTIFY POINTS OF STRUCTURAL BREAKDOWN OR OPERATING REGIONS)

6 381 G1-28 DO YOU DETERMINE WHETHER PN JUNCTION DIODES ARE FORWARD BIASED OR REVERSE BIASED WHEN YOU READ OR INTERPRET CIRCUIT DIAGRAMS

6 382 G1-29 DO YOU USE OR REFER TO VALENCE BAND IN SEMICONDUCTOR MATERIALS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

	SPC 076	SPC 077	SPC 078	SPC 079
G 383 G1-30 DO YOU USE OR REFER TO FORBIDDEN BAND IN SEMICONDUCTOR MATERIALS	3	4	0	3
G 384 G1-31 DO YOU USE OR REFER TO CONDUCTION BAND IN SEMICONDUCTOR MATERIALS	2	2	0	2
G 385 G1-32 DO YOU USE OR REFER TO COVALENT BONDING IN SEMICONDUCTOR MATERIALS	3	4	0	3
G 386 G1-33 DO YOU USE OR REFER TO ELECTRON-HOLE PAIR CREATED IN SEMICONDUCTORS	2	2	0	2
G 387 G1-34 DO YOU USE OR REFER TO ELECTRON FLOW OR HOLE FLOW IN SEMICONDUCTORS	2	2	0	2
G 388 G1-35 DO YOU USE OR REFER TO DONOR IMPURITY IN SEMICONDUCTORS	2	2	0	2
G 389 G1-36 DO YOU USE OR REFER TO ACCEPTOR IMPURITY IN SEMICONDUCTORS	2	2	0	2
G 390 G1-37 DO YOU USE OR REFER TO P-TYPE SEMICONDUCTOR MATERIAL	6	8	0	7
G 391 G1-38 DO YOU USE OR REFER TO N-TYPE SEMICONDUCTOR MATERIAL	6	8	0	7
G 392 G1-39 DO YOU USE OR REFER TO MAJORITY CARRIERS IN SEMICONDUCTORS	4	5	0	3
G 393 G1-40 DO YOU USE OR REFER TO MINORITY CARRIERS IN SEMICONDUCTORS	4	5	0	3
G 394 G1-41 DO YOU USE OR REFER TO JUNCTION RECOMBINATION IN SEMICONDUCTORS	3	4	0	3
G 395 G1-42 DO YOU USE OR REFER TO DEPLETION REGION IN SEMICONDUCTORS	2	2	0	2
G 396 G1-43 DO YOU USE OR REFER TO RELATIONSHIP BETWEEN BARRIER WIDTH AND DIFFERENCE OF POTENTIAL	3	4	0	3
G 397 G1-44 DO YOU USE OR REFER TO THE 10:1 BACK TO FRONT RESISTANCE RATIO FOR DIODES	1	1	0	1
G 398 G1-45 DO YOU USE OR REFER TO BARRIER HEIGHT IN SEMICONDUCTORS	0	0	0	0
G 399 G1-46 DO YOU USE OR REFER TO DIODE SUBSTITUTION INFORMATION	4	5	0	3
G 400 G1-47 DO YOU USE OR REFER TO MAXIMUM AVERAGE FORWARD CURRENT DIODE RATINGS	5	6	0	3
G 401 G1-48 DO YOU USE OR REFER TO PEAK RECURRENT FORWARD CURRENT DIODE RATINGS	4	5	0	2
G 402 G1-49 DO YOU USE OR REFER TO MAXIMUM SURGE CURRENT DIODE RATINGS	5	6	0	3
G 403 G1-50 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE DIODE RATINGS	4	5	0	2
G 404 G2-01 DO YOU WORK WITH TRANSISTORS IN YOUR PRESENT JOB.	26	29	16	25
G 405 G2-02 DO YOU INSPECT TRANSISTORS	18	19	12	16
G 406 G2-03 DO YOU REMOVE OR REPLACE TRANSISTORS	11	13	4	12
G 407 G2-04 DO YOU CHECK TRANSISTORS USING AN INSTRUMENT	13	13	12	13
G 408 G2-05 DO YOU USE OR REFER TO EMITTER - BASE (EB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS	14	16	8	15
G 409 G2-06 DO YOU USE OR REFER TO COLLECTOR - BASE (CB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS	15	17	8	16

TRANSISTORS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMINGSPC SPC SPC SPC
076 077 078 079

DY-TSK

G 410 G2-07 DO YOU USE OR REFER TO EMITTER - COLLECTOR (EC)
RESISTANCE MEASUREMENTS 14 17 4 15

G 411 G2-08 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE
PHYSICAL BARRIER WIDTH OF THE EMITTER - BASE JUNCTION 10 11 8 11

G 412 G2-09 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE
PHYSICAL BARRIER WIDTH OF THE COLLECTOR - BASE JUNCTION 9 11 4 10

G 413 G2-10 DO YOU USE OR REFER TO THE PHYSICAL SIZE OF THE
TRANSISTOR STRUCTURE (COLLECTOR, BASE AND EMITTER) 8 11 0 10

G 414 G2-11 DO YOU USE OR REFER TO LEAKAGE CURRENT (ICBO) IN A
TRANSISTOR 4 5 0 4

G 415 G2-12 DO YOU USE OR REFER TO TRANSISTOR SCHEMATIC SYMBOLS 21 23 16 20

G 416 G2-13 DO YOU USE OR REFER TO TRANSISTOR NOTATION SUCH AS
Q1, Q2, Q3, ETC 21 23 16 20

G 417 G2-14 DO YOU USE OR REFER TO TRANSISTOR SUBSTITUTION
INFORMATION 7 10 0 7

G 418 G2-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE
TRANSISTOR BASE CURRENT IS NORMALLY SIGNIFICANTLY
SMALLER THAN THE EMITTER CURRENT IE (USUALLY IS BEING 2 TO
8 PERCENT OF IE) 9 11 4 8

G 419 G2-16 DO YOU USE THE INFORMATION THAT THE EFFECT OF EMITTER
BASE VOLTAGE ON BASE CURRENT IS THE CONTROLLING FACTOR FOR
TRANSISTORS 10 12 4 9

G 420 G2-17 DO YOU USE THE GENERAL RULE THAT LEAKAGE CURRENT
(ICBO) IN A TRANSISTOR INCREASES AS TEMPERATURE INCREASES 6 7 4 7

G 421 G2-18 DO YOU USE OR REFER TO TRANSISTOR CHARACTERISTIC
CURVES 3 4 0 3

G 422 G2-19 DO YOU USE OR REFER TO BETA TRANSISTOR GAINS 5 6 0 4

G 423 G2-20 DO YOU USE OR REFER TO ALPHA TRANSISTOR GAINS 5 6 0 4

G 424 G2-21 DO YOU USE OR REFER TO GAMMA TRANSISTOR GAINS 5 6 0 4

G 425 G2-22 DO YOU CALCULATE BETA TRANSISTOR GAINS 2 2 0 1

G 426 G2-23 DO YOU CALCULATE ALPHA TRANSISTOR GAINS 2 2 0 1

G 427 G2-24 DO YOU CALCULATE GAMMA TRANSISTOR GAINS 2 2 0 1

G 428 G3-01 DO YOU WORK WITH TRANSISTOR AMPLIFIERS IN YOUR
PRESENT JOB 9 11 4 7

G 429 G3-02 DO YOU INSPECT TRANSISTOR AMPLIFIERS 6 7 4 3

G 430 G3-03 DO YOU ALIGN OR ADJUST TRANSISTOR AMPLIFIERS 6 6 4 3

G 431 G3-04 DO YOU TROUBLESHOOT TO THE AMPLIFIER CIRCUIT LEVEL 6 7 4 3

G 432 G3-05 DO YOU TROUBLESHOOT TO AMPLIFIER COMPONENTS 5 6 0 2

G 433 G3-06 DO YOU REMOVE OR REPLACE THE COMPLETE AMPLIFIER 8 10 4 6

G 434 G3-07 DO YOU REMOVE OR REPLACE AMPLIFIER COMPONENTS 2 2 0 0

G 435 G3-08 DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN
COLLECTOR CURRENT WHICH RESULTS FROM A CHANGE IN BASE
CURRENT 2 2 0 1

G 436 G3-09 DO YOU USE OR REFER TO (COMMON EMITTER) THE
CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN
COLLECTOR CURRENT WHICH RESULTS FROM A SPECIFIC CHANGE IN
BASE CURRENT 1 1 0 0

TRANSISTOR AMPLIFIERS

PCT MEMS RESPONDING 'YES' BY SELECTED GRPS

GPSUM4 PAGE 17

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

SPC SPC SPC SPC
076 077 078 079

G 437 G3-10 DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN COLLECTOR VOLTAGE WHICH RESULTS FROM A CHANGE IN BASE CURRENT

G 438 G3-11 DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN COLLECTOR VOLTAGE WHICH RESULTS FROM A SPECIFIC CHANGE IN BASE CURRENT

G 439 G3-12 DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN BASE CURRENT WHICH RESULTS FROM AN INPUT SIGNAL

G 440 G3-13 DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN BASE CURRENT WHICH RESULTS FROM A SPECIFIC INPUT SIGNAL

G 441 G3-14 DO YOU USE THE LOAD-LINE METHOD OF ANALYSIS IN YOUR CIRCUIT ANALYSIS (THIS METHOD REQUIRES YOU TO PLOT A LOAD-LINE ON A TRANSISTOR CHARACTERISTIC CURVE)

G 442 G3-15 DO YOU USE OR REFER TO THE OPERATING POINT Q (QUIESCENT POINT) FOR A TRANSISTOR

G 443 G3-16 DO YOU CALCULATE THE SPECIFIC QUIESCENT POINT FOR A PARTICULAR TRANSISTOR

G 444 G3-17 DO YOU MEASURE VOLTAGE GAIN USED IN THE COMMON EMITTER CONFIGURATION

G 445 G3-18 DO YOU MEASURE CURRENT GAIN USED IN THE COMMON EMITTER CONFIGURATION

G 446 G3-19 DO YOU MEASURE POWER GAIN USED IN THE COMMON EMITTER CONFIGURATION

G 447 G3-20 DO YOU CALCULATE THE VOLTAGE GAIN FOR SPECIFIC TRANSISTORS USING A FORMULA THAT IS, DO YOU DIVIDE THE CHANGE IN BASE-EMITTER VOLTAGE INTO THE CHANGE THE BASE COLLECTOR VOLTAGE TO DETERMINE THE VOLTAGE GAIN

G 448 G3-21 DO YOU CALCULATE THE CURRENT GAIN FOR SPECIFIC TRANSISTORS USING A FORMULA THAT IS, DO YOU DIVIDE THE CHANGE IN BASE CURRENT INTO THE CHANGE IN COLLECTOR CURRENT TO DETERMINE THE CURRENT GAIN

G 449 G3-22 DO YOU CALCULATE THE POWER GAIN FOR A SPECIFIC TRANSISTOR USING A FORMULA THAT IS, DO YOU MULTIPLY THE CURRENT GAIN TIMES THE VOLTAGE GAIN TO DETERMINE THE POWER GAIN

G 450 G3-23 DO YOU NEED TO KNOW THAT MORE COLLECTOR CURRENT IS GENERATED WITH LESS COLLECTOR VOLTAGE AS TEMPERATURE INCREASES (THIS AFFECTS THE STATIC OPERATING POINT EQ) OF THE TRANSISTOR)

G 451 G3-24 DO YOU COMPUTE THE STATIC OPERATING POINT (EQ) OF A TRANSISTOR AT DIFFERENT TEMPERATURES

G 452 G3-25 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH EMITTER (SWAMPING) RESISTOR STABILIZATION

G 453 G3-26 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH SELF-BIAS STABILIZATION

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

GPSUMN PAGE 18

UY-TSK

	SPC 076	SPC 077	SPC 078	SPC 079
G 454 G3-27 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH THERMISTOR STABILIZATION	3	4	0	2
G 455 G3-28 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH FORWARD BIAS DIODE STABILIZATION	2	2	0	1
G 456 G3-29 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH REVERSE BIAS DIODE STABILIZATION	2	2	0	1
G 457 G3-30 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH DOUBLE DIODE STABILIZATION	2	2	0	1
G 458 G3-31 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM EMITTER (SWAMPING) RESISTOR STABILIZATION	3	4	0	2
G 459 G3-32 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM SELF-BIAS STABILIZATION	2	2	0	2
G 460 G3-33 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THERMISTOR STABILIZATION	4	5	0	3
G 461 G3-34 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM FORWARD BIAS DIODE STABILIZATION	3	4	0	2
G 462 G3-35 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM REVERSE BIAS DIODE STABILIZATION	3	4	0	2
G 463 G3-36 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM DOUBLE DIODE STABILIZATION	3	4	0	2
G 464 G3-37 DO YOU IDENTIFY AMPLITUDE DISTORTION FOR TRANSISTOR CIRCUITS	1	1	0	0
G 465 G3-38 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF AMPLITUDE DISTORTION	3	4	0	1
G 466 G3-39 DO YOU IDENTIFY FREQUENCY DISTORTION FOR TRANSISTOR CIRCUITS	2	2	0	1
G 467 G3-40 DO YOU IDENTIFY PHASE DISTORTION FOR TRANSISTOR CIRCUITS	1	1	0	1
G 468 G3-41 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF PHASE DISTORTION	0	0	0	0
G 469 G3-42 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF FREQUENCY DISTORTION	0	0	0	0
G 470 G3-43 DO YOU NEED TO KNOW THE DEGENERATIVE EFFECTS ON THE CIRCUIT CAUSED BY CHANGING EMITTER RESISTANCE FOR TRANSISTOR AMPLIFIERS IN THE COMMON COLLECTOR CONFIGURATION	0	0	0	0
G 471 G3-44 DO YOU DETERMINE THE CLASS OF OPERATION FOR AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER CIRCUITS	1	1	0	1
G 472 G3-45 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS	1	1	0	1
G 473 G3-46 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS	2	2	0	1
G 474 G3-47 DO YOU TROUBLESHOOT OR REPAIR COMPLEMENTARY SYMMETRY CIRCUITS	0	0	0	0
G 475 G3-48 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS	1	1	0	1

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

UY-TSK

6 476 G3-49 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED
AMPLIFIERSH 477 H1-01 DO YOU USE OR REFER TO VARACTORS 2 2 0 2
H 478 H1-02 DO YOU USE OR REFER TO TUNNEL DIODES 2 2 0 2
H 479 H1-03 DO YOU USE OR REFER TO FIELD EFFECT TRANSISTORS (FET) 2 2 0 2
H 480 H1-04 DO YOU USE OR REFER TO UNIJUNCTION TRANSISTORS 2 2 0 2
H 481 H1-05 DO YOU USE OR REFER TO ZENER DIODES 20 24 8 19
H 482 H1-06 DO YOU USE OR REFER TO INTEGRATED CIRCUITS 20 23 12 20
H 483 H2-01 IN YOUR PRESENT JOB, DO YOU WORK WITH POWER SUPPLIES 98 75 88 75
H 484 H2-02 DO YOU INSPECT POWER SUPPLIES 77 73 88 76
H 485 H2-03 DO YOU CLEAN POWER SUPPLIES 60 55 76 60
H 486 H2-04 DO YOU ALIGN OR ADJUST POWER SUPPLIES 19 20 16 17
H 487 H2-05 DO YOU TROUBLESHOOT TO POWER SUPPLY CIRCUIT LEVEL 60 60 60 62
H 488 H2-06 DO YOU TROUBLESHOOT TO POWER SUPPLY COMPONENTS 45 42 56 48
H 489 H2-07 DO YOU REMOVE OR REPLACE COMPLETE POWER SUPPLIES 76 72 88 74
H 490 H2-08 DO YOU REMOVE OR REPLACE POWER SUPPLY COMPONENTS 44 37 64 48
H 491 H2-09 DO YOU WORK WITH HALF-WAVE RECTIFIERS 12 12 12 11
H 492 H2-10 DO YOU WORK WITH FULL-WAVE RECTIFIERS OTHER THAN
BRIDGE RECTIFIERS 12 12 12 11

BRIDGE RECTIFIERS

H 493 H2-11 DO YOU WORK WITH BRIDGE RECTIFIERS 17 17 16 15
H 494 H2-12 DO YOU WORK WITH THREE-PHASE RECTIFIERS 6 7 4 7
H 495 H2-13 DO YOU USE OR REFER TO INPUT VOLTAGE 38 35 48 39
H 496 H2-14 DO YOU USE OR REFER TO INPUT FREQUENCY 22 23 20 24
H 497 H2-15 DO YOU USE OR REFER TO PEAK OUTPUT VOLTAGE 20 20 20 21
H 498 H2-16 DO YOU USE OR REFER TO AVERAGE OUTPUT VOLTAGE 29 28 32 28
H 499 H2-17 DO YOU USE OR REFER TO RIPPLE AMPLITUDE 3 4 0 3
H 500 H2-18 DO YOU USE OR REFER TO RIPPLE FREQUENCY 3 4 0 3
H 501 H2-19 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE 6 7 0 7
H 502 H2-20 DO YOU USE OR REFER TO SHAPE OF OUTPUT WAVEFORMS 6 7 0 7
H 503 H2-21 DO YOU USE OR REFER TO EFFECTIVE OUTPUT VOLTAGE 19 23 4 19
H 504 H2-22 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE
FILTERS 19 20 16 22

FILTERS

H 505 H2-23 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE
FILTERS 14 14 12 16
H 506 H2-24 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE
INPUT L-TYPE FILTERS 6 5 12 8
H 507 H2-25 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE
INPUT L-TYPE FILTERS 6 6 8 7
H 508 H2-26 DO YOU WORK WITH CIRCUITS WHICH EMPLOY LC PI-TYPE
FILTERS 4 4 4 3
H 509 H2-27 DO YOU WORK WITH CIRCUITS WHICH EMPLOY RC PI-TYPE
FILTERS 6 4 12 6
H 510 H2-28 DO YOU WORK WITH CIRCUITS WHICH EMPLOY DON'T
REMEMBER WHICH TYPE OF FILTER 20 17 32 18
H 511 H2-29 DO YOU HAVE THE OPTION OF REPLACING ONE TYPE OF
FILTER WITH A DIFFERENT TYPE FILTER 4 5 0 3

H 512 H3-01 DO YOU WORK WITH OSCILLATORS IN YOUR PRESENT JOB

OSCILLATORS

POWER SUPPLIES

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

GPSUMN PAGE 20

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK		SPC 076	SPC 077	SPC 078	SPC 079
M 513	H3-02 DO YOU INSPECT OSCILLATORS	2	2	0	2
M 514	H3-03 DO YOU ALIGN OR ADJUST OSCILLATORS	1	1	0	1
M 515	H3-04 DO YOU REMOVE OR REPLACE COMPLETE OSCILLATORS	1	1	0	1
M 516	H3-05 DO YOU REMOVE OR REPLACE OSCILLATOR COMPONENTS	0	0	0	0
M 517	H3-06 DO YOU TROUBLESHOOT TO OSCILLATOR CIRCUIT LEVEL	1	1	0	1
M 518	H3-07 DO YOU TROUBLESHOOT TO OSCILLATOR COMPONENTS	1	1	0	1
M 519	H3-08 DO YOU USE OR REFER TO FEEDBACK	2	1	4	2
M 520	H3-09 DO YOU USE OR REFER TO FREQUENCY DETERMINING DEVICES (FDD)	0	0	0	0
M 521	H3-10 DO YOU USE OR REFER TO AMPLITUDE STABILITY	0	0	0	0
M 522	H3-11 DO YOU USE OR REFER TO FREQUENCY STABILITY	1	1	0	1
M 523	H3-12 DO YOU USE OR REFER TO DAMPING	0	0	0	0
M 524	H3-13 DO YOU USE OR REFER TO REGenerative FEEDBACK	0	0	0	0
M 525	H3-14 DO YOU USE OR REFER TO PIEZOELECTRIC EFFECT	0	0	0	0
M 526	H3-15 DO YOU USE OR REFER TO CRITICAL DAMPING	0	0	0	0
M 527	H3-16 DO YOU USE OR REFER TO UNDER DAMPING	0	0	0	0
M 528	H3-17 DO YOU USE OR REFER TO OVER DAMPING	0	0	0	0
M 529	H3-18 DO YOU WORK WITH OSCILLATORS WHICH USE LC TANK CIRCUITS AS FDD	1	1	0	1
M 530	H3-19 DO YOU WORK WITH OSCILLATORS WHICH USE RC NETWORKS AS FDD	2	2	0	2
M 531	H3-20 DO YOU WORK WITH OSCILLATORS WHICH USE CRYSTALS AS FDD	0	0	0	0
M 532	H3-21 DO YOU WORK WITH OSCILLATORS WHICH USE DON'T REMEMBER WHICH TYPE OF FDD	2	2	0	2
M 533	H3-22 DO YOU WORK WITH SERIES HARTLEY SINUSOIDAL OSCILLATORS	0	0	0	0
M 534	H3-23 DO YOU WORK WITH SHUNT HARTLEY SINUSOIDAL OSCILLATORS	0	0	0	0
M 535	H3-24 DO YOU WORK WITH COLPITTS SINUSOIDAL OSCILLATORS	0	0	0	0
M 536	H3-25 DO YOU WORK WITH CLAPP SINUSOIDAL OSCILLATORS	0	0	0	0
M 537	H3-26 DO YOU WORK WITH BUTLER SINUSOIDAL OSCILLATORS	0	0	0	0
M 538	H3-27 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF OSCILLATORS	3	4	0	3
M 539	I1-01 DO YOU WORK WITH MULTIVIBRATORS IN YOUR PRESENT JOB	1	1	0	0
M 540	I1-02 DO YOU INSPECT WAVE GENERATING OR SHAPING CIRCUITS	0	0	0	0
M 541	I1-03 DO YOU ALIGN OR ADJUST WAVE GENERATING OR SHAPING CIRCUITS	0	0	0	0
M 542	I1-04 DO YOU CALIBRATE WAVE GENERATING OR SHAPING CIRCUITS	0	0	0	0
M 543	I1-05 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING CIRCUITS	0	0	0	0
M 544	I1-06 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING CIRCUIT COMPONENTS	0	0	0	0
M 545	I1-07 DO YOU REMOVE OR REPLACE COMPLETE WAVE GENERATING OR SHAPING CIRCUITS	1	1	0	0
M 546	I1-08 DO YOU REMOVE OR REPLACE WAVE GENERATING OR SHAPING CIRCUIT COMPONENTS	0	0	0	0
M 547	I1-09 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK CIRCUITS	0	0	0	0

MULTIVIBRATORS

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

SPC	SPC	SPC	SPC
076	077	078	079

UY-TSK

I 548 11-10 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN RC NETWORKS

I 549 11-11 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN CRYSTALS

I 550 11-12 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN DON'T REMEMBER WHICH TYPE OF PDD

I 551 11-13 DO YOU WORK WITH ASTABLE MULTIVIBRATORS

I 552 11-14 DO YOU WORK WITH MONOSTABLE MULTIVIBRATORS

I 553 11-15 DO YOU WORK WITH BISTABLE MULTIVIBRATORS

I 554 11-16 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE MULTIVIBRATORS

I 555 12-01 DO YOU WORK WITH LIMITERS OR CLAMPERS IN YOUR PRESENT JOB

I 556 12-02 DO YOU WORK WITH SERIES DIODE LIMITERS

I 557 12-03 DO YOU WORK WITH SHUNT DIODE LIMITERS

I 558 12-04 DO YOU WORK WITH LIMITERS WITH BIAS

I 559 12-05 DO YOU WORK WITH ZENER DIODE LIMITERS

I 560 12-06 DO YOU WORK WITH TRANSISTOR LIMITERS

I 561 12-07 DO YOU WORK WITH DON'T KNOW WHICH TYPE OF LIMITERS

I 562 12-08 DO YOU WORK WITH BASIC DIODE CLAMPING CIRCUITS

I 563 12-09 DO YOU WORK WITH DIODE CLAMPING CIRCUITS WITH BIAS

I 564 12-10 DO YOU WORK WITH DON'T KNOW WHICH TYPE OF CLAMPING CIRCUIT

I 565 13-01 IN YOUR PRESENT JOB, DO YOU WORK ON EQUIPMENT WHICH CONTAINS ELECTRON TUBES

I 566 13-02 DO YOU CHECK ELECTRON TUBES TO SEE IF THEY ARE GOOD

I 567 13-03 DO YOU USE TUBE TESTERS TO CHECK ELECTRON TUBES

I 568 13-04 DO YOU USE MULTIMETERS TO CHECK ELECTRON TUBES

I 569 13-05 DO YOU USE SCOPES TO CHECK ELECTRON TUBES

I 570 13-06 DO YOU USE SUBSTITUTION TO CHECK ELECTRON TUBES

I 571 13-07 DO YOU USE OR REFER TO CUTOFF

I 572 13-08 DO YOU USE OR REFER TO PEAK INVERSE VOLTAGE RATING

I 573 13-09 DO YOU USE OR REFER TO PEAK CURRENT RATING

I 574 13-10 DO YOU USE OR REFER TO TRANSIT TIME

I 575 13-11 DO YOU USE OR REFER TO PLATE DISSIPATION RATING

I 576 13-12 DO YOU USE OR REFER TO SATURATION

I 577 13-13 DO YOU USE OR REFER TO DC PLATE RESISTANCE

I 578 13-14 DO YOU COMPUTE ACTUAL VALUES OF THE DC PLATE RESISTANCE FOR ELECTRON TUBES

I 579 13-15 DO YOU USE OR REFER TO PLATE VOLTAGE

I 580 13-16 DO YOU USE OR REFER TO PLATE CURRENT

I 581 13-17 DO YOU USE OR REFER TO GRID VOLTAGE

I 582 13-18 DO YOU USE OR REFER TO GRID CURRENT

I 583 13-19 DO YOU USE OR REFER TO CATHODE VOLTAGE

I 584 13-20 DO YOU USE OR REFER TO CATHODE CURRENT

I 585 13-21 DO YOU USE OR REFER TO THE TRIODE AMPLIFICATION FACTOR (THE AMPLIFICATION FACTOR FOR TRIODES IS DEFINED AS THE RATIO OF CHANGE IN PLATE VOLTAGE TO A CHANGE IN GRID VOLTAGE)

LIMITERS AND CLAMPERS

ELECTRON TUBES

PCT MBRS RESPONDING *YES* BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

UY-TSK

SPC SPC SPC SPC
076 077 078 079

I 586 13-22 DO YOU CALCULATE ACTUAL VALUES OF TRIODE
 AMPLIFICATION FACTORS
 I 587 13-23 DO YOU USE OR REFER TO MULTIGRID (TETRODE, PENTODE,
 ETC) AMPLIFICATION FACTORS
 I 588 13-24 DO YOU USE OR REFER TO ELECTRON TUBE TRANSDUCTANCE
 (G, WHICH IS MEASURED IN MHOS)
 I 589 13-25 DO YOU CALCULATE ACTUAL VALUES OF ELECTRON TUBE
 TRANSDUCTANCES
 I 590 13-26 DO YOU USE OR REFER TO THE ELECTRON TUBE PARAMETER
 CALLED AC PLATE RESISTANCE
 I 591 13-27 DO YOU CALCULATE ACTUAL VALUES OF AC PLATE
 RESISTANCE
 I 592 13-28 DO YOU USE OR REFER TO ELECTRON TUBE INTERELECTRODE
 CAPACITANCE
 I 593 13-29 DO YOU USE OR REFER TO CHARACTERISTIC CURVES IN YOUR
 WORK WITH ELECTRON TUBES
 I 594 13-30 DO YOU USE CHARACTERISTIC CURVES TO SELECT PLATE
 VOLTAGE FOR A SPECIFIED BIAS
 I 595 13-31 DO YOU USE CHARACTERISTIC CURVES TO SELECT PLATE
 CURRENT FOR A SPECIFIED BIAS
 I 596 13-32 DO YOU USE CHARACTERISTIC CURVES TO SELECT BIAS
 REQUIRED FOR CUTOFF
 I 597 13-33 DO YOU USE CHARACTERISTIC CURVES TO SELECT BIAS
 REQUIRED FOR SATURATION
 I 598 13-34 DO YOU USE OR REFER TO ELECTRON TUBE AMPLIFIER GAIN
 I 599 13-35 DO YOU USE OR REFER TO ELECTRON TUBE AMPLIFIER
 EFFICIENCY
 I 600 13-36 DO YOU USE TEST TUBE CHECKERS TO DETERMINE ELECTRON
 TUBE AMPLIFIER GAIN
 I 601 13-37 DO YOU USE MULTIMETERS TO DETERMINE ELECTRON TUBE
 AMPLIFIER GAIN
 I 602 13-38 DO YOU USE OSCILLOSCOPES TO DETERMINE ELECTRON TUBE
 AMPLIFIER GAIN
 I 603 13-39 DO YOU USE CHARACTERISTIC CURVES TO DETERMINE
 ELECTRON TUBE AMPLIFIER GAIN
 I 604 13-40 DO YOU CALCULATE ANY ELECTRON TUBE CAPACITANCES SUCH
 AS INPUT CAPACITANCE
 I 605 13-41 DO YOU USE OR REFER TO TUBE SOCKET NOTATION
 I 606 13-42 DO YOU USE OR REFER TO PIN NUMBERING SYSTEMS
 I 607 13-43 DO YOU USE OR REFER TO THE TYPE OF MATERIAL OR THE
 OPERATING TEMPERATURE OF THE EMITTING SURFACE IN THE
 ELECTRON TUBES YOU WORK ON
 I 608 13-44 DO YOU USE OR REFER TO TUBE SUBSTITUTION MATERIAL
 SUCH AS MANUALS OR CHARTS
 J 609 J1-01 DO YOU WORK WITH ELECTRON TUBE AMPLIFIERS OR CIRCUITS
 IN YOUR PRESENT JOB
 J 610 J1-02 DO YOU DETERMINE THE CLASS OF OPERATION FOR ELECTRON
 TUBE AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER
 CIRCUITS

ELECTRON TUBE AMPLIFIERS
AND CIRCUITS

PCT MBMS RESPONDING 'YES' BY SELECTED GRPS

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TASK GROUP SUMMARY PERCENT MEMBERS PERFORMING

SPC SPC SPC SPC
076 077 078 079

DY-TSK

J 611	J1-03	DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS	0	0	0	0	0
J 612	J1-04	DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS	0	0	0	0	0
J 613	J1-05	DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS	0	0	0	0	0
J 614	J1-06	DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS	0	0	0	0	0
J 615	J1-07	DO YOU TROUBLESHOOT OR REPAIR DON'T KNOW WHICH TYPE OF AMPLIFIER	0	0	0	0	0
J 616	J2-01	DO YOU WORK WITH GAS TUBES (HOT CATHODE OR COLD CATHODE)	0	0	0	0	0
J 617	J2-02	DO YOU WORK WITH CATHODE-RAY TUBES	0	0	0	0	0
J 618	J2-03	DO YOU USE OR REFER TO THE CHARACTERISTICS OF BEAM POWER TUBES	0	0	0	0	0
J 619	J2-04	DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH BEAM POWER TUBES ARE USED	0	0	0	0	0
J 620	J2-05	DO YOU USE OR REFER TO THE CHARACTERISTICS OF THYRATRONS	0	0	0	0	0
J 621	J2-06	DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH THYRATRONS ARE USED	0	0	0	0	0
J 622	J2-07	DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTRON GUNS OF CATHODE-RAY TUBES (CRT)	0	0	0	0	0
J 623	J2-08	DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROMAGNETIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES (CRT)	0	0	0	0	0
J 624	J2-09	DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROSTATIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES (CRT)	0	0	0	0	0
J 625	J2-10	DO YOU USE OR REFER TO PHOSPHOR SCREENS	0	0	0	0	0
J 626	J2-11	DO YOU USE OR REFER TO AQUADAG COATINGS	0	0	0	0	0
J 627	J2-12	DO YOU USE OR REFER TO ELECTRON OPTICS	0	0	0	0	0
J 628	J2-13	DO YOU USE OR REFER TO PERSISTENCE	0	0	0	0	0
J 629	J2-14	DO YOU USE OR REFER TO DECAY TIMES	0	0	0	0	0
J 630	J2-15	DO YOU USE OR REFER TO FLUORESCENCE	0	0	0	0	0
J 631	J2-16	DO YOU USE OR REFER TO PHOSPHORESCENCE	0	0	0	0	0
J 632	J3-01	DO YOU WORK ON TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB	11	11	12	9	
J 633	J3-02	DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS	0	0	0	0	0
J 634	J3-03	DO YOU PERFORM TASKS ON FREQUENCY MIXERS	0	0	0	0	0
J 635	J3-04	DO YOU USE OR REFER TO THE HETERODYNING OF SIGNALS IN YOUR WORK WITH TRANSMIT OR RECEIVE SYSTEMS	0	0	0	0	0
J 636	J3-05	DO YOU PERFORM TASKS ON REACTANCE MODULATORS	0	0	0	0	0
J 637	J3-06	DO YOU PERFORM TASKS ON MODULATED OSCILLATORS	0	0	0	0	0
K 638	K1-01	DO YOU WORK ON AM TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB	0	0	0	0	0
K 639	K1-02	DO YOU INSPECT AM TRANSMIT OR RECEIVE SYSTEMS	0	0	0	0	0
K 640	K1-03	DO YOU CLEAN AM TRANSMIT OR RECEIVE SYSTEMS	0	0	0	0	0
K 641	K1-04	DO YOU ALIGN OR ADJUST AM TRANSMIT OR RECEIVE SYSTEMS	0	0	0	0	0

SPECIAL PURPOSE ELECTRON TUBES

HETERODYNING, MODULATION, AND DEMODULATION

AM SYSTEMS

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

UY-TSK	SPC 076	SPC 077	SPC 078	SPC 079
K 642 KI-05 DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE SYSTEMS	0	0	0	0
K 643 KI-06 DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE COMPONENTS	0	0	0	0
K 644 KI-07 DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE SYSTEMS	0	0	0	0
K 645 KI-08 DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE COMPONENTS	0	0	0	0
K 646 KI-09 DO YOU PERFORM TASKS ON RF OSCILLATORS	0	0	0	0
K 647 KI-10 DO YOU PERFORM TASKS ON RF AMPLIFIERS	0	0	0	0
K 648 KI-11 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS	1	1	0	1
K 649 KI-12 DO YOU PERFORM TASKS ON POWER AMPLIFIERS	0	0	0	0
K 650 KI-13 DO YOU PERFORM TASKS ON LOCAL OSCILLATORS	0	0	0	0
K 651 KI-14 DO YOU PERFORM TASKS ON IF AMPLIFIERS	0	0	0	0
K 652 KI-15 DO YOU PERFORM TASKS ON DETECTORS	0	0	0	0
K 653 KI-16 DO YOU PERFORM TASKS ON DON'T REMEMBER WHICH AM STAGE	0	0	0	0
K 654 KI-17 DO YOU USE OR REFER TO AMPLITUDE STABILIZATION IN TRANSMITTERS	0	0	0	0
K 655 KI-18 DO YOU USE OR REFER TO FREQUENCY STABILIZATION IN TRANSMITTERS	0	0	0	0
K 656 KI-19 DO YOU USE OR REFER TO SENSITIVITY OF RECEIVERS	0	0	0	0
K 657 KI-20 DO YOU USE OR REFER TO SELECTIVITY OF RECEIVERS	0	0	0	0
K 658 KI-21 DO YOU USE OR REFER TO 2ND HARMONIC DISTORTION	0	0	0	0
K 659 KI-22 DO YOU USE OR REFER TO BANDPASS DISTORTION	0	0	0	0
K 660 KI-23 DO YOU USE OR REFER TO SQUARE LAW DISTORTION	0	0	0	0
K 661 KI-24 DO YOU USE OR REFER TO CO-CHANNEL INTERFERENCE	0	0	0	0
K 662 KI-25 DO YOU USE OR REFER TO IMAGE FREQUENCIES IN RECEIVERS	0	0	0	0
K 663 KI-26 DO YOU USE OR REFER TO SIGNAL TO IMAGE RATIOS OR IMAGE REJECTION RATIOS	0	0	0	0
K 664 KI-27 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH AM TRANSMITTER SCHEMATIC DIAGRAMS	0	0	0	0
K 665 KI-28 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH AM RECEIVER SCHEMATIC DIAGRAMS	0	0	0	0
K 666 KI-29 DO YOU WORK WITH FM TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB	0	0	0	0
K 667 KI-30 DO YOU INSPECT FM TRANSMIT OR RECEIVE SYSTEMS	0	0	0	0
K 668 KI-31 DO YOU CLEAN FM TRANSMIT OR RECEIVE SYSTEMS	0	0	0	0
K 669 KI-32 DO YOU ALIGN FM TRANSMIT OR RECEIVE SYSTEMS	0	0	0	0
K 670 KI-33 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE SYSTEMS	0	0	0	0
K 671 KI-34 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE COMPONENTS	0	0	0	0
K 672 KI-35 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE SYSTEMS	0	0	0	0
K 673 KI-36 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE COMPONENTS	0	0	0	0
K 674 KI-37 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS	0	0	0	0
K 675 KI-38 DO YOU PERFORM TASKS ON FREQUENCY MULTIPLIERS	0	0	0	0

FM SYSTEMS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMINGSPC SPC SPC SPC
076 077 078 079

DY-TSK

K 676 K2-11 DO YOU PERFORM TASKS ON DRIVERS (INTERMEDIATE AMPLIFIERS)
K 677 K2-12 DO YOU PERFORM TASKS ON POWER AMPLIFIERS
K 678 K2-13 DO YOU PERFORM TASKS ON RF AMPLIFIERS
K 679 K2-14 DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS
K 680 K2-15 DO YOU PERFORM TASKS ON IF AMPLIFIERS
K 681 K2-16 DO YOU PERFORM TASKS ON LIMITERS
K 682 K2-17 DO YOU PERFORM TASKS ON FREQUENCY DISCRIMINATORS
K 683 K2-18 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM TRANSMITTERS
K 684 K2-19 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM RECEIVERS
K 685 K3-01 DO YOU CONVERT DECIMAL (BASE 10) NUMBERS TO OCTAL (BASE 8) NUMBERS
K 686 K3-02 DO YOU CONVERT DECIMAL NUMBERS TO BINARY (BASE 2) NUMBERS
K 687 K3-03 DO YOU CONVERT OCTAL NUMBERS TO DECIMAL NUMBERS
K 688 K3-04 DO YOU CONVERT OCTAL NUMBERS TO BINARY NUMBERS
K 689 K3-05 DO YOU CONVERT BINARY NUMBERS TO DECIMAL NUMBERS
K 690 K3-06 DO YOU CONVERT BINARY NUMBERS TO OCTAL NUMBERS
K 691 K3-07 DO YOU ADD BINARY NUMBERS TO GET A SUM
K 692 K3-08 DO YOU SUBTRACT BINARY NUMBERS USING THE END-AROUND-CARRY METHOD
K 693 K3-09 DO YOU SUBTRACT BINARY NUMBERS USING THE DIRECT SUBTRACTION METHOD
K 694 K3-10 DO YOU ADD OCTAL NUMBERS TO GET A SUM
L 695 L1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS RELATING TO LOGIC FUNCTIONS
L 696 L1-02 DO YOU CONSTRUCT TRUTH TABLES FOR AND LOGIC SYMBOLS OR GATES
L 697 L1-03 DO YOU CONSTRUCT TRUTH TABLES FOR OR LOGIC SYMBOLS OR GATES
L 698 L1-04 DO YOU CONSTRUCT TRUTH TABLES FOR AND OR LOGIC SYMBOLS WITH STATE INDICATORS
L 699 L1-05 DO YOU CONSTRUCT TRUTH TABLES FOR EXCLUSIVE OR LOGIC SYMBOLS OR GATES
L 700 L1-06 DO YOU USE OR REFER TO TRUTH TABLES FOR AND LOGIC SYMBOLS OR GATES
L 701 L1-07 DO YOU USE OR REFER TO TRUTH TABLES FOR OR LOGIC SYMBOLS OR GATES
L 702 L1-08 DO YOU USE OR REFER TO TRUTH TABLES FOR AND OR OR LOGIC SYMBOLS WITH STATE INDICATORS
L 703 L1-09 DO YOU USE OR REFER TO TRUTH TABLES FOR EXCLUSIVE OR LOGIC SYMBOLS
L 704 L1-10 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR AND GATES
L 705 L1-11 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR OR GATES
L 706 L1-12 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR NAND OR NOR GATES

NUMBERING SYSTEMS

LOGIC FUNCTIONS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

BY-TSK	SPC	SPC	SPC	SPC	SPC
	076	077	078	079	079
L 707 L1-13 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR EXCLUSIVE OR GATES	0	0	0	0	0
L 708 L2-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS RELATING TO BOOLEAN EQUATIONS, LOGIC DIAGRAMS, OR LOGIC CIRCUITS	0	0	0	0	0
L 709 L2-02 DO YOU DRAW LOGIC SYMBOLS FOR DIRECT COUPLED TRANSISTOR LOGIC (DCTL) CIRCUITS	0	0	0	0	0
L 710 L2-03 DO YOU CONSTRUCT TRUTH TABLES FOR CURRENT MODE LOGIC (CML) CIRCUITS	0	0	0	0	0
L 711 L2-04 DO YOU DRAW LOGIC DIAGRAMS FROM GIVEN BOOLEAN EQUATIONS	0	0	0	0	0
L 712 L2-05 DO YOU MEASURE INPUTS OR OUTPUTS OF LOGIC GATES	0	0	0	0	0
L 713 L2-06 DO YOU DEVELOP OR ANALYZE BOOLEAN EQUATIONS IN THE PROCESS OF TROUBLESHOOTING DIGITAL CIRCUITS	0	0	0	0	0
L 714 L2-07 DO YOU ANALYZE LOGIC CIRCUITS BY USING BOOLEAN ALGEBRA	0	0	0	0	0
L 715 L2-08 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR DIRECT COUPLED TRANSISTOR LOGIC (DCTL) CIRCUIT GATES	0	0	0	0	0
L 716 L2-09 DO YOU USE OR REFER TO TRUTH TABLES FOR CURRENT MODE LOGIC (CML) CIRCUITS	0	0	0	0	0
L 717 L2-10 DO YOU USE OR REFER TO LOGIC DIAGRAMS CONSISTING OF MORE THAN ONE GATE	0	0	0	0	0
L 718 L2-11 DO YOU COMPUTE SUM AND CARRY EXPRESSIONS FOR SERIAL HALF OR FULL ADDER LOGIC DIAGRAMS	0	0	0	0	0
L 719 L2-12 DO YOU TRACE DATA FLOW THROUGH PARALLEL FULL ADDER LOGIC DIAGRAMS	0	0	0	0	0
L 720 L2-13 DO YOU WORK WITH ASTABLE (FREE RUNNING) MULTIVIBRATORS	0	0	0	0	0
L 721 L2-14 DO YOU WORK WITH BISTABLE (FLIP-FLOP) MULTIVIBRATORS	0	0	0	0	0
L 722 L2-15 DO YOU WORK WITH MONOSTABLE (ONE-SHOT) MULTIVIBRATORS	0	0	0	0	0
L 723 L2-16 DO YOU USE OR REFER TO FLIP-FLOP MULTIVIBRATOR SYMBOLS	0	0	0	0	0
L 724 L2-17 DO YOU USE OR REFER TO SINGLE-SHOT MULTIVIBRATOR SYMBOLS	0	0	0	0	0
L 725 L2-18 DO YOU USE OR REFER TO FLIP-FLOP CIRCUIT DIAGRAMS	0	0	0	0	0
L 726 L2-19 DO YOU USE OR REFER TO FLIP-FLOP TRUTH TABLES	0	0	0	0	0
L 727 L2-20 DO YOU USE OR REFER TO COMPLEMENTED FLIP-FLOP LOGIC SYMBOLS	0	0	0	0	0
L 728 L2-21 DO YOU USE OR REFER TO COMPLEMENTING FLIP-FLOP LOGIC SYMBOLS	0	0	0	0	0
L 729 L2-22 DO YOU MEASURE OUTPUT WAVESHAPES OF LOGIC CIRCUITS	0	0	0	0	0
L 730 L2-23 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTED FLIP-FLOP SCHEMATIC DIAGRAMS	0	0	0	0	0
L 731 L2-24 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTING FLIP-FLOP SCHEMATIC DIAGRAMS	0	0	0	0	0
L 732 L2-25 DO YOU CONSTRUCT TRUTH TABLES FOR J-K FLIP-FLOP LOGIC SYMBOLS	0	0	0	0	0

BOOLEAN EQUATIONS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

UY-TSK

L 733 L3-01 DO YOU WORK WITH DIGITAL COUNTERS IN YOUR PRESENT JOB
L 734 L3-02 DO YOU USE OR REFER TO UP-COUNTERS
L 735 L3-03 DO YOU USE OR REFER TO DOWN-COUNTERS
L 736 L3-04 DO YOU USE OR REFER TO SERIAL COUNTERS
L 737 L3-05 DO YOU USE OR REFER TO PARALLEL COUNTERS
L 738 L3-06 DO YOU USE OR REFER TO RING COUNTERS
L 739 L3-07 DO YOU USE OR REFER TO DECADE COUNTERS
L 740 L3-08 DO YOU USE OR REFER TO COUNT DETECT CIRCUITS
L 741 L3-09 DO YOU USE OR REFER TO DOWN CLOCKS
L 742 L3-10 DO YOU USE OR REFER TO UP CLOCKS
L 743 L3-11 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF
UP-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS
L 744 L3-12 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF
SERIAL UP- OR DOWN-COUNTERS HAVING COMPLEMENTING FLIP-
FLOPS
L 745 L3-13 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF
DECADE COUNTERS
L 746 L3-14 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF
RING COUNTERS
L 747 L3-15 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF
SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE REGISTER
L 748 L3-16 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF
SHIFT REGISTERS
L 749 L3-17 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF
OTHER TYPE OF COUNTERS
L 750 L3-18 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT
PULSES FOR UP-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS
L 751 L3-19 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT
PULSES FOR SERIAL UP- OR DOWN-COUNTERS HAVING COMPLEMENT-
ING FLIP-FLOPS
L 752 L3-20 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT
PULSES FOR SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE
REGISTERS
L 753 L3-21 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT
PULSES FOR OTHER TYPES OF COUNTERS
L 754 L3-22 DO YOU CONSTRUCT TRUTH TABLES FROM LOGIC DIAGRAMS OF
DECADE COUNTERS
L 755 L3-23 DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP IN RING
COUNTERS FOR SPECIFIC INPUT PULSES
L 756 L3-24 DO YOU DETERMINE THE APPROPRIATE AND GATE NECESSARY
IN COUNT DETECT CIRCUITS TO INDICATE A REQUIRED COUNT
M 757 MI-01 DO YOU WORK WITH SAWTOOTH WAVE GENERATORS
M 758 MI-02 DO YOU WORK WITH TRAPEZOIDAL WAVE GENERATORS
M 759 MI-03 DO YOU WORK WITH PULSED OSCILLATORS WITH REGENERATIVE
FEEDBACK
M 760 MI-04 DO YOU WORK WITH PULSED OSCILLATORS WITHOUT
REGENERATIVE FEEDBACK

SPC SPC SPC SPC
076 077 078 079

COUNTERS

TIMING CIRCUITS

PCT MEMBERS RESPONDING 'YES' BY SELECTED GRPS

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TASK GROUP SUMMARY PERCENT MEMBERS PERFORMING

UY-TSK

	SPC 076	SPC 077	SPC 078	SPC 079	
M 761 M1-05 DO YOU WORK WITH BLOCKING OSCILLATORS	0	0	0	0	
M 762 M1-06 DO YOU USE OR REFER TO RISE TIME	0	0	0	0	
M 763 M1-07 DO YOU USE OR REFER TO FALL OR FLYBACK TIME	0	0	0	0	
M 764 M1-08 DO YOU USE OR REFER TO SWEEP TIME	0	0	0	0	
M 765 M1-09 DO YOU USE OR REFER TO ELECTRICAL LENGTH OF SAWTOOTH WAVEFORMS	0	0	0	0	
M 766 M1-10 DO YOU USE OR REFER TO PHYSICAL LENGTH OF SAWTOOTH WAVEFORMS	0	0	0	0	
M 767 M1-11 DO YOU USE OR REFER TO LINEAR SLOPE OF SAWTOOTH WAVEFORMS	0	0	0	0	
M 768 M1-12 DO YOU USE OR REFER TO GATE LENGTH OF SAWTOOTH WAVEFORMS	0	0	0	0	
M 769 M2-01 DO YOU USE SIGNAL GENERATORS IN YOUR PRESENT JOB	5	6	0	4	
M 770 M2-02 DO YOU PERFORM OPERATIONAL CHECKS WHILE USING SIGNAL GENERATORS	4	5	0	4	
M 771 M2-03 DO YOU PERFORM PERIODIC MAINTENANCE SUCH AS ADJUSTING, ALIGNING, OR CALIBRATING WHILE USING SIGNAL GENERATORS	2	2	0	2	
M 772 M2-04 DO YOU TROUBLESHOOT TO AN ASSEMBLY OR SUBASSEMBLY WHILE USING SIGNAL GENERATORS	3	4	0	3	
M 773 M2-05 DO YOU TROUBLESHOOT TO THE SMALLEST REPLACEABLE COMPONENT WHILE USING SIGNAL GENERATORS	1	1	0	1	
M 774 M2-06 DO YOU USE AUDIO SINE-WAVE GENERATORS	2	2	0	2	USE OF SIGNAL GENERATORS
M 775 M2-07 DO YOU USE AUDIO NON-SINUSOIDAL WAVE GENERATORS SUCH AS SQUARE WAVE, TRIANGLE, PULSE, OR SPIKE	1	1	0	1	
M 776 M2-08 DO YOU USE RF GENERATORS LESS THAN 1,000 MH	2	2	0	2	
M 777 M2-09 DO YOU USE RF GENERATORS GREATER THAN 1,000 MH	1	1	0	1	
M 778 M2-10 DO YOU USE OTHER SPECIAL PURPOSE OR MULTI-FUNCTION GENERATORS	3	4	0	3	
M 779 M3-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH ALTERNATING CURRENT OR DIRECT CURRENT MOTORS OR GENERATORS	19	18	24	20	
M 780 M3-02 DO YOU INSPECT MOTORS	15	14	16	16	
M 781 M3-03 DO YOU CLEAN OR LUBRICATE MOTORS	7	7	8	8	
M 782 M3-04 DO YOU OPERATE MOTORS	11	10	16	10	
M 783 M3-05 DO YOU REMOVE OR REPLACE COMPLETE MOTORS	15	13	20	15	
M 784 M3-06 DO YOU REMOVE OR REPLACE MOTOR PARTS	4	5	0	3	
M 785 M3-07 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF MOTORS	16	13	24	16	MOTORS AND GENERATORS
M 786 M3-08 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF MOTORS	5	4	0	4	
M 787 M3-09 DO YOU PERFORM ANY TASKS ON FIELD COILS	2	2	0	1	
M 788 M3-10 DO YOU PERFORM ANY TASKS ON ARMATURES	4	4	4	3	
M 789 M3-11 DO YOU PERFORM ANY TASKS ON ROTORS	3	2	4	2	
M 790 M3-12 DO YOU PERFORM ANY TASKS ON BRUSHES	4	4	4	2	
M 791 M3-13 DO YOU PERFORM ANY TASKS ON SLIP RINGS	4	4	4	3	
M 792 M3-14 DO YOU PERFORM ANY TASKS ON COMMUTATORS	2	2	0	1	
M 793 M3-15 DO YOU PERFORM ANY TASKS ON POLE PIECES	3	4	0	2	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

SPC SPC SPC SPC
076 077 078 079

M 794 M3-16 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OF THE FORCE OR TORQUE CREATED BY A MOTOR

M 795 M3-17 DO YOU DETERMINE OR MEASURE THE DIRECTION OF THE MECHANICAL FORCE OR TORQUE CREATED BY A MOTOR

M 796 M3-18 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OR DIRECTION OF THE INDUCED VOLTAGE IN MOTORS

M 797 M3-19 DO YOU WORK WITH SYNCHRONOUS MOTORS

M 798 M3-20 DO YOU WORK WITH INDUCTION MOTORS

M 799 M3-21 DO YOU WORK WITH SPLIT-PHASE MOTORS

M 800 M3-22 DO YOU WORK WITH SOME COMBINATION OF THE ABOVE MOTORS

M 801 M3-23 DO YOU INSPECT GENERATORS

M 802 M3-24 DO YOU CLEAN OR LUBRICATE GENERATORS

M 803 M3-25 DO YOU OPERATE GENERATORS

M 804 M3-26 DO YOU REMOVE OR REPLACE COMPLETE GENERATORS

M 805 M3-27 DO YOU REMOVE OR REPLACE GENERATOR PARTS

M 806 M3-28 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF GENERATORS

M 807 M3-29 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF GENERATORS

N 808 N1-01 DO YOU WORK WITH METERS IN YOUR PRESENT JOB

N 809 N1-02 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF PERMANENT MAGNETS

N 810 N1-03 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF MOVING COILS

N 811 N1-04 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF SPIRAL SPRINGS

N 812 N1-05 DO YOU READ METER SCALES

N 813 N1-06 DO YOU EXTEND THE RANGE OF AMMETERS

N 814 N1-07 DO YOU ZERO OHMMETERS

N 815 N1-08 DO YOU ZERO AMMETERS

N 816 N1-09 DO YOU EXTEND THE RANGE OF VOLTMETERS

N 817 N1-10 DO YOU USE OR REFER TO VOLTMETER SENSITIVITY (EXPRESSED IN UNITS OF OHMS PER VOLT)

N 818 N2-01 DO YOU WORK WITH SATURABLE REACTORS OR MAGNETIC AMPLIFIERS IN YOUR PRESENT JOB

N 819 N2-02 DO YOU INSPECT MAGNETIC AMPLIFIERS OR SATURABLE REACTORS

N 820 N2-03 DO YOU CLEAN MAGNETIC AMPLIFIERS OR SATURABLE REACTORS

N 821 N2-04 DO YOU ADJUST MAGNETIC AMPLIFIERS OR SATURABLE REACTORS

N 822 N2-05 DO YOU TROUBLESHOOT MAGNETIC AMPLIFIERS OR SATURABLE REACTORS

N 823 N2-06 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIERS OR SATURABLE REACTORS

N 824 N2-07 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIER OR SATURABLE REACTOR COMPONENTS

METER MOVEMENTS

SATURABLE REACTORS AND MAGNETIC AMPLIFIERS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

UY-TSK

	SPC 076	SPC 077	SPC 078	SPC 079
N 825 N2-08 DO YOU USE OR REFER TO HYSTERESIS CURVES OR LOOPS	0	0	0	0
N 826 N2-09 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT WAVEFORMS ACROSS REACTOR WINDINGS OR LOAD RESISTORS OF SINGLE WINDING SATURABLE REACTORS	0	0	0	0
N 827 N2-10 DO YOU MEASURE OUTPUT WAVEFORMS ACROSS REACTOR WINDINGS OR LOAD RESISTORS OF SINGLE WINDING SATURABLE REACTORS	0	0	0	0
N 828 N2-11 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT WAVEFORMS FOR MAGNETIC AMPLIFIERS	0	0	0	0
N 829 N2-12 DO YOU USE OR REFER TO COERCIVE FORCE IN SATURABLE REACTORS	0	0	0	0
N 830 N2-13 DO YOU USE OR REFER TO RESIDUAL MAGNETISM IN SATURABLE REACTORS	0	0	0	0
N 831 N2-14 DO YOU USE OR REFER TO FLUX DENSITY IN SATURABLE REACTORS	0	0	0	0
N 832 N2-15 DO YOU USE OR REFER TO POINT OF SATURATION IN SATURABLE REACTORS	0	0	0	0
N 833 N2-16 DO YOU USE OR REFER TO SATURABLE REACTOR SCHEMATIC SYMBOLS	0	0	0	0
N 834 N3-01 DO YOU WORK WITH WAVESHAPING CIRCUITS IN YOUR PRESENT JOB	0	0	0	0
N 835 N3-02 DO YOU USE OR REFER TO TRANSIENT INTERVALS	0	0	0	0
N 836 N3-03 DO YOU USE OR REFER TO PULSE WIDTH (PW)	0	0	0	0
N 837 N3-04 DO YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT)	0	0	0	0
N 838 N3-05 DO YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY (PRF)	0	0	0	0
N 839 N3-06 DO YOU USE OR REFER TO DIFFERENTIATING CIRCUITS	0	0	0	0
N 840 N3-07 DO YOU USE OR REFER TO INTEGRATING CIRCUITS	0	0	0	0
N 841 N3-08 DO YOU USE OR REFER TO THE CLASSIFICATION OF TIME CONSTANTS (TC) AS LONG, MEDIUM, OR SHORT	1	1	0	0
N 842 N3-09 DO YOU DETERMINE WHETHER AN LR OR RC CIRCUIT IS DIFFERENTIATING OR INTEGRATING BASED ON THE TIME CONSTANT AND OUTPUT CONFIGURATION	0	0	0	0
N 843 N3-10 DO YOU WORK WITH SQUARE WAVE GENERATORS	0	0	0	0
N 844 N3-11 DO YOU WORK WITH RECTANGULAR WAVE GENERATORS	0	0	0	0
N 845 01-01 DO YOU WORK ON SINGLE SIDEBAND SYSTEMS IN YOUR PRESENT JOB	0	0	0	0
N 846 01-02 DO YOU INSPECT SSB TRANSMIT OR RECEIVE SYSTEMS	0	0	0	0
N 847 01-03 DO YOU CLEAN SSB TRANSMIT OR RECEIVE SYSTEMS	0	0	0	0
N 848 01-04 DO YOU ALIGN SSB TRANSMIT OR RECEIVE SYSTEMS	0	0	0	0
N 849 01-05 DO YOU TROUBLESHOOT TO SSB TRANSMIT OR RECEIVE SYSTEMS	0	0	0	0
N 850 01-06 DO YOU TROUBLESHOOT TO SSB TRANSMIT OR RECEIVE COMPONENTS	0	0	0	0
N 851 01-07 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE SYSTEMS	0	0	0	0
N 852 01-08 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE COMPONENTS	0	0	0	0

WAVESHAPING CIRCUITS

SINGLE SIDEBAND SYSTEMS

PCT MEMS RESPONDING *YES* BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMINGSPC SPC SPC SPC
076 077 078 079

DY-TSK

0 853 01-09 DO YOU PERFORM TASKS ON SSB AUDIO AMPLIFIERS
 0 854 01-10 DO YOU PERFORM TASKS ON SSB BALANCED MODULATORS
 0 855 01-11 DO YOU PERFORM TASKS ON SSB CARRIER OSCILLATORS
 0 856 01-12 DO YOU PERFORM TASKS ON SSB LC FILTERS
 0 857 01-13 DO YOU PERFORM TASKS ON SSB CRYSTAL FILTERS
 0 858 01-14 DO YOU PERFORM TASKS ON SSB MECHANICAL FILTERS
 0 859 01-15 DO YOU PERFORM TASKS ON SSB OSCILLATORS
 0 860 01-16 DO YOU PERFORM TASKS ON SSB MIXERS
 0 861 01-17 DO YOU PERFORM TASKS ON SSB DRIVERS
 0 862 01-18 DO YOU PERFORM TASKS ON SSB POWER AMPLIFIERS
 0 863 01-19 DO YOU PERFORM TASKS ON SSB HF AMPLIFIERS
 0 864 01-20 DO YOU PERFORM TASKS ON SSB FREQUENCY CONVERTERS
 0 865 01-21 DO YOU PERFORM TASKS ON SSB IF AMPLIFIERS
 0 866 01-22 DO YOU PERFORM TASKS ON SSB DEMODULATORS
 0 867 01-23 DO YOU PERFORM TASKS ON SSB DON'T REMEMBER WHICH SSB
 SYSTEM STAGES
 0 868 01-24 DO YOU USE OR REFER TO SELECTIVE FADING
 0 869 01-25 DO YOU USE OR REFER TO PEAK POWER
 0 870 01-26 DO YOU USE OR REFER TO FREQUENCY STABILITY
 0 871 01-27 DO YOU USE OR REFER TO RESPONSE CURVES FOR
 BANDWIDTH FILTERS
 0 872 01-28 DO YOU CALCULATE PEAK POWER OR EFFECTIVE POWER OF SSB
 TRANSMITTERS
 0 873 01-29 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SSB
 TRANSMITTER SCHEMATIC DIAGRAMS
 0 874 01-30 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SSB
 RECEIVER SCHEMATIC DIAGRAMS
 0 875 02-01 DO YOU WORK ON PULSE MODULATION SYSTEMS IN YOUR
 PRESENT JOB
 0 876 02-02 DO YOU INSPECT PULSE MODULATION SYSTEMS
 0 877 02-03 DO YOU CLEAN PULSE MODULATION SYSTEMS
 0 878 02-04 DO YOU ALIGN PULSE MODULATION SYSTEMS
 0 879 02-05 DO YOU TROUBLESHOOT TO PULSE MODULATION SYSTEMS
 0 880 02-06 DO YOU TROUBLESHOOT TO PULSE MODULATION SYSTEM
 COMPONENTS
 0 881 02-07 DO YOU REMOVE OR REPLACE PULSE MODULATION SYSTEMS
 0 882 02-08 DO YOU REMOVE OR REPLACE PULSE MODULATION SYSTEM
 COMPONENTS
 0 883 02-09 DO YOU WORK ON PULSE-AMPLITUDE MODULATION (PAM)
 SYSTEMS
 0 884 02-10 DO YOU WORK ON PULSE-DURATION MODULATION (PDM)
 SYSTEMS
 0 885 02-11 DO YOU WORK ON PULSE-POSITION MODULATION (PPM)
 SYSTEMS
 0 886 02-12 DO YOU WORK ON PULSE-CODE MODULATION (PCM) SYSTEMS
 0 887 02-13 DO YOU WORK ON LINE PULSING MODULATION SYSTEMS
 0 888 02-14 DO YOU WORK ON DON'T REMEMBER WHICH TYPE OF
 MODULATION SYSTEM

PULSE MODULATION SYSTEMS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK		SPC 076	SPC 077	SPC 078	SPC 079
0 916	03-03 DO YOU CLEAN ANTENNAS	0	0	0	0
0 917	03-04 DO YOU PHYSICALLY ALIGN ANTENNAS	1	1	0	1
0 918	03-05 DO YOU ELECTRICALLY ALIGN ANTENNAS	1	1	0	1
0 919	03-06 DO YOU TROUBLESHOOT TO ANTENNAS	1	1	0	1
0 920	03-07 DO YOU TROUBLESHOOT TO ANTENNA COMPONENTS	0	0	0	0
0 921	03-08 DO YOU REMOVE OR INSTALL ANTENNAS	1	1	0	1
0 922	03-09 DO YOU REMOVE OR REPLACE COMPONENTS OF ANTENNAS	0	0	0	0
0 923	03-10 DO YOU USE OR REFER TO TECHNICAL DATA CONTAINING REPRESENTATIONS OF E OR ELECTRIC FIELD LINES	0	0	0	0
0 924	03-11 DO YOU USE OR REFER TO TECHNICAL DATA CONTAINING REPRESENTATIONS OF H OR MAGNETIC FIELD LINES	0	0	0	0
0 925	03-12 DO YOU DETERMINE THE DIRECTION OF THE MAGNETIC LINES IN RELATION TO THE ELECTRIC LINES OF FORCE FOR ANTENNAS	0	0	0	0
0 926	03-13 DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE OF CORRECT LENGTH (HALF-WAVE) ACT AS INDUCTIVE LOADS TO THE GENERATOR	0	0	0	0
0 927	03-14 DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE LONGER THAN A HALF-WAVE ACT AS INDUCTIVE LOADS TO THE GENERATOR	0	0	0	0
0 928	03-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE SHORTER THAN A HALF-WAVE ACT AS CAPACITIVE LOADS TO THE GENERATOR	0	0	0	0
0 929	03-16 DO YOU WORK WITH HERTZ ANTENNAS	0	0	0	0
0 930	03-17 DO YOU WORK WITH MARCONI ANTENNAS	0	0	0	0
0 931	03-18 DO YOU WORK WITH BROADSIDE ARRAYS	1	1	0	1
0 932	03-19 DO YOU WORK WITH END-FIRE ARRAYS	0	0	0	0
0 933	03-20 DO YOU WORK WITH CARDIOID ARRAYS	0	0	0	0
0 934	03-21 DO YOU WORK WITH COLLINER ARRAYS	0	0	0	0
0 935	03-22 DO YOU USE OR REFER TO THE TERM ELECTROMAGNETIC INDUCTION FIELDS WHEN WORKING WITH ANTENNAS	0	0	0	0
0 936	03-23 DO YOU MEASURE ELECTROMAGNETIC INDUCTION FIELDS OF ANTENNAS	0	0	0	0
0 937	03-24 DO YOU USE OR REFER TO THE TERM ELECTROMAGNETIC RADIATION FIELDS WHEN WORKING WITH ANTENNAS	0	0	0	0
0 938	03-25 DO YOU MEASURE ELECTROMAGNETIC RADIATION FIELDS OF ANTENNAS	0	0	0	0
0 939	03-26 DO YOU USE OR REFER TO THE TIME PHASE OF ELECTRIC (E) AND MAGNETIC (H) COMPONENTS IN ANTENNA RADIATION	0	0	0	0
0 940	03-27 DO YOU USE OR REFER TO THE TIME PHASE OF ELECTRIC (E) AND MAGNETIC (H) COMPONENTS IN ANTENNA INDUCTION FIELD	0	0	0	0
0 941	03-28 ARE ANY OF THE ANTENNAS YOU WORK ON LINEARLY POLARIZED	0	0	0	0
0 942	03-29 ARE ANY OF THE ANTENNAS YOU WORK ON CIRCULARLY POLARIZED	0	0	0	0
0 943	03-30 DO YOU MEASURE OR DETERMINE THE POLARITY OF ANTENNAS YOU WORK ON	0	0	0	0
0 944	03-31 DO YOU CONSTRUCT, OR MAKE THE CALCULATIONS NECESSARY TO CONSTRUCT, ANTENNAS OF CORRECT LENGTH FOR SPECIFIC WAVELENGTHS	0	0	0	0

PCT MBMS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

SPC SPC SPC SPC
076 077 078 079

0 945 03-32 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS

0 946 03-33 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS DIRECTORS

0 947 03-34 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS REFLECTORS

0 948 03-35 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN DON'T REMEMBER WHAT KIND OF ELEMENTS

0 949 03-36 DO YOU WORK ON UNIDIRECTIONAL ANTENNAS

0 950 03-37 DO YOU WORK ON BIDIRECTIONAL ANTENNAS

0 951 03-38 DO YOU WORK ON DON'T REMEMBER THE DIRECTIONALITY

0 952 03-39 DO YOU WORK WITH ROTAR ANTENNA ARRAYS

P 953 P1-01 IN YOUR PRESENT JOB DO YOU WORK WITH TRANSMISSION LINES (TRANSMISSION LINES ARE DEFINED TO INCLUDE LEADS BETWEEN RECEIVERS AND ANTENNAS, TELEPHONE LEADS, AS WELL AS HIGH VOLTAGE POWER LINES, ETC. DO NOT CONSIDER WAVEGUIDES AS TRANSMISSION LINES)

P 954 P1-02 DO YOU REFER TO OR USE COPPER LOSS OR I2R LOSS IN TRANSMISSION LINES

P 955 P1-03 DO YOU REFER TO OR USE SKIN EFFECTS OF HIGH FREQUENCY CURRENTS IN TRANSMISSION LINES

P 956 P1-04 DO YOU REFER TO OR USE RADIATION LOSS IN TRANSMISSION LINES

P 957 P1-05 DO YOU USE OR REFER TO DIELECTRIC LOSS IN TRANSMISSION LINES

P 958 P1-06 DO YOU USE OR REFER TO LEAKAGE LOSSES IN TRANSMISSION LINES

P 959 P1-07 DO YOU WORK WITH TWISTED PAIR TRANSMISSION LINES

P 960 P1-08 DO YOU WORK WITH TWIN LEAD TRANSMISSION LINES

P 961 P1-09 DO YOU WORK WITH OPEN TWO-WIRE TRANSMISSION LINES

P 962 P1-10 DO YOU WORK WITH FLEXIBLE COAXIAL CABLE TRANSMISSION LINES

P 963 P1-11 DO YOU WORK WITH RIGID COAXIAL CABLE TRANSMISSION LINES

P 964 P1-12 DO YOU THROULESHOOT TRANSMISSION LINES

P 965 P1-13 DO YOU ANALYZE VOLTAGE OR CURRENT WAVEFORMS IN TRANSMISSION LINES TO DETERMINE THE TYPE OF TERMINATION (OPEN, SHORTED, CAPACITIVE, INDUCTIVE)

P 966 P1-14 DO YOU SELECT APPROPRIATE TRANSMISSION LINES TERMINATIONS TO ACHIEVE DESIRED WAVEFORMS

P 967 P1-15 DO YOU USE OR REFER TO SCHEMATIC SYMBOLS FOR LINE TERMINATIONS IN TERMS OF CIRCUIT TERMINATIONS

P 968 P1-16 DO YOU MEASURE STANDING WAVE RATIOS (SWR) OF TRANSMISSION LINES

P 969 P1-17 DO YOU CALCULATE STANDING WAVE RATIOS (SWR) OF TRANSMISSION LINES

P 970 P1-18 DO YOU PERFORM THE CALCULATIONS NECESSARY TO DETERMINE THE IMPEDANCE AND LENGTH OF QUARTER - WAVELENGTH MATCHING TRANSFORMERS TO MATCH TRANSMISSION LINES TO LOADS

TRANSMISSION LINES

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

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TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

SPC SPC SPC SPC
076 077 078 079

DY-TSK

P 971 P1-19 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED
TO LOADS USING MATCHING TRANSFORMERS 10 11 8 10

P 972 P1-20 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED
TO LOADS USING DELTA MATCHING 3 4 0 2

P 973 P1-21 DO YOU SELECT THE TYPE OF TRANSMISSION LINE NEEDED
FOR PARTICULAR JOBS WITHOUT REFERRING TO TECHNICAL DATA 17 19 8 17

P 974 P1-22 DO YOU USE OR REFER TO THE TERM CHARACTERISTIC
IMPEDANCE (Z0) OF TRANSMISSION LINES 6 7 4 7

P 975 P1-23 DO YOU CALCULATE THE CHARACTERISTIC IMPEDANCE (Z0) OF
TRANSMISSION LINES 3 4 0 3

P 976 P1-24 DO YOU USE OR REFER TO THE TERM CUTOFF FREQUENCY OF
TRANSMISSION LINES 6 7 0 4

P 977 P1-25 DO YOU USE OR REFER TO THE TERM VELOCITY FACTOR (K)
OF TRANSMISSION LINES 2 2 0 2

P 978 P1-26 DO YOU COMPUTE THE ELECTRICAL LENGTH OF TRANSMISSION
LINES FOR PARTICULAR FREQUENCIES 2 2 0 2

P 979 P1-27 DO YOU CONSTRUCT TRANSMISSION LINES OF PARTICULAR
ELECTRICAL LENGTH FOR GIVEN FREQUENCIES 3 2 4 3

P 980 P1-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT AS THE
FREQUENCY INCREASES AND THE PHYSICAL LENGTH OF
TRANSMISSION LINES REMAIN CONSTANT, THE ELECTRICAL LENGTH
INCREASES 6 7 4 7

P 981 P1-29 DO YOU WORK WITH NONRESONANT (FLAT) TRANSMISSION
LINES 11 13 4 13

P 982 P1-30 DO YOU WORK WITH RESONANT TRANSMISSION LINES 11 13 4 12

P 983 P1-31 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED
TO LOADS USING STUB MATCHING 3 4 0 3

P 984 P2-01 DO YOU WORK WITH WAVEGUIDES OR CAVITY RESONATORS IN
YOUR PRESENT JOB 0 0 0 0

P 985 P2-02 DO YOU INSPECT WAVEGUIDES OR CAVITY RESONATORS 0 0 0 0

P 986 P2-03 DO YOU CLEAN WAVEGUIDES OR CAVITY RESONATORS 0 0 0 0

P 987 P2-04 DO YOU BEND WAVEGUIDES OR CAVITY RESONATORS 0 0 0 0

P 988 P2-05 DO YOU TWIST WAVEGUIDES OR CAVITY RESONATORS 0 0 0 0

P 989 P2-06 DO YOU PRESSURIZE WAVEGUIDES OR CAVITY RESONATORS 0 0 0 0

P 990 P2-07 DO YOU PURGE WAVEGUIDES OR CAVITY RESONATORS 0 0 0 0

P 991 P2-08 DO YOU TROUBLESHOOT WAVEGUIDES OR CAVITY RESONATORS 0 0 0 0

P 992 P2-09 DO YOU REMOVE OR INSTALL COMPLETE WAVEGUIDES 0 0 0 0

P 993 P2-10 DO YOU REMOVE OR INSTALL WAVEGUIDE SECTIONS 0 0 0 0

P 994 P2-11 DO YOU REMOVE OR INSTALL DUMMY LOADS 0 0 0 0

P 995 P2-12 DO YOU REMOVE OR INSTALL E BENDS 0 0 0 0

P 996 P2-13 DO YOU REMOVE OR INSTALL H BENDS 0 0 0 0

P 997 P2-14 DO YOU REMOVE OR INSTALL OTHER BENDS 0 0 0 0

P 998 P2-15 DO YOU REMOVE OR INSTALL CHOKE JOINTS 0 0 0 0

P 999 P2-16 DO YOU REMOVE OR INSTALL ROTATING JOINTS 0 0 0 0

P1000 P2-17 DO YOU REMOVE OR INSTALL DIRECTIONAL COUPLERS 0 0 0 0

P1001 P2-18 DO YOU REMOVE OR INSTALL BIDIRECTIONAL COUPLERS 0 0 0 0

P1002 P2-19 DO YOU USE OR REFER TO "A" WALL OF WAVEGUIDES 0 0 0 0

WAVEGUIDES AND CAVITY RESONATORS

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

UY-TSK	SPC 076	SPC 077	SPC 078	SPC 079
P1003 P2-20 DO YOU USE OR REFER TO "B" WALL OF WAVEGUIDES	0	0	0	0
P1004 P2-21 DO YOU USE OR REFER TO CUTOFF FREQUENCY OF WAVEGUIDES	0	0	0	0
P1005 P2-22 DO YOU USE OR REFER TO FREQUENCY-DETERMINING WALL OF WAVEGUIDES	0	0	0	0
P1006 P2-23 DO YOU USE OR REFER TO POWER-DETERMINING WALL OF WAVEGUIDES	0	0	0	0
P1007 P2-24 DO YOU USE OR REFER TO ELECTRIC FIELD BOUNDARY CONDITIONS	0	0	0	0
P1008 P2-25 DO YOU USE OR REFER TO MAGNETIC FIELD BOUNDARY CONDITIONS	0	0	0	0
P1009 P2-26 DO YOU USE OR REFER TO DUPLEXER FIELD BOUNDARY CONDITIONS	0	0	0	0
P1010 P2-27 DO YOU USE OR REFER TO THE GENERAL RULE THAT MOST WAVEGUIDES ARE MADE WITH A "B" WALL SIZE OF .7 WAVELENGTHS OF THE OPERATING FREQUENCY	0	0	0	0
P1011 P2-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT MOST "A" WALLS RANGE FROM .2 TO .5 WAVELENGTHS IN SIZE, WITH .35 USED AS AN AVERAGE	0	0	0	0
P1012 P2-29 ARE YOU CONCERNED WITH THE MATERIAL (SUCH AS BRASS) WHICH WAVEGUIDES ARE MADE OF	0	0	0	0
P1013 P2-30 DO YOU COMPUTE THE LENGTH OF A WAVEGUIDE FOR SPECIFIC INSTALLATION	0	0	0	0
P1014 P2-31 DO YOU USE THE RIGHT HAND RULE TO DETERMINE THE DIRECTION OF PROPAGATION, DIRECTION OF "E" FIELD, OR DIRECTION OF "H" FIELD IN WAVEGUIDES	0	0	0	0
P1015 P2-32 DO YOU USE OR REFER TO THE TIME PHASE OF PEAK "E" OR "H" LINES IN WAVEGUIDES	0	0	0	0
P1016 P2-33 DO YOU MEASURE THE TIME PHASE OF "E" OR "H" LINES IN WAVEGUIDES	0	0	0	0
P1017 P2-34 DO YOU USE OR REFER TO THE SPACE QUADRATURE OF "E" OR "H" LINES IN WAVEGUIDES	0	0	0	0
P1018 P2-35 ARE HIGH POWER PROBES USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	0	0	0	0
P1019 P2-36 ARE LOW POWER PROBES USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	0	0	0	0
P1020 P2-37 ARE LOOPS USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	0	0	0	0
P1021 P2-38 ARE APERTURES (WINDOWS OR IRISES) USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	0	0	0	0
P1022 P2-39 ARE DON'T REMEMBER THE KIND OF ENERGY COUPLING USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	0	0	0	0
P1023 P2-40 DO YOU DETERMINE WHERE PROBES SHOULD BE MOUNTED IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO TECHNICAL DATA	0	0	0	0
P1024 P2-41 DO YOU DETERMINE THE POSITIONING OF LOOPS IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO TECHNICAL DATA	0	0	0	0

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	SPC 076	SPC 077	SPC 078	SPC 079
PI059 P3-26 DO YOU TUNE PARAMETRIC AMPLIFIERS	0	0	0	0
PI060 P3-27 DO YOU PERFORM OPERATIONAL CHECKS OF PARAMETRIC AMPLIFIERS	0	0	0	0
PI061 P3-28 DO YOU TROUBLESHOOT PARAMETRIC AMPLIFIERS	0	0	0	0
PI062 P3-29 DO YOU REMOVE OR REPLACE COMPLETE PARAMETRIC AMPLIFIER	0	0	0	0
PI063 P3-30 DO YOU REMOVE OR REPLACE PARAMETRIC AMPLIFIER COMPONENTS	0	0	0	0
PI064 P3-31 DO YOU INSPECT MAGNETRONS	0	0	0	0
PI065 P3-32 DO YOU CLEAN MAGNETRONS	0	0	0	0
PI066 P3-33 DO YOU ADJUST MAGNETRONS	0	0	0	0
PI067 P3-34 DO YOU TUNE MAGNETRONS	0	0	0	0
PI068 P3-35 DO YOU PERFORM OPERATIONAL CHECKS OF MAGNETRONS	0	0	0	0
PI069 P3-36 DO YOU TROUBLESHOOT MAGNETRONS	0	0	0	0
PI070 P3-37 DO YOU REMOVE OR REPLACE COMPLETE MAGNETRON	0	0	0	0
PI071 P3-38 DO YOU REMOVE OR REPLACE MAGNETRON COMPONENTS	0	0	0	0
PI072 P3-39 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS COLLECTOR PLATES	0	0	0	0
PI073 P3-40 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATCHER CAVITIES	0	0	0	0
PI074 P3-41 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATCHER GRIDS	0	0	0	0
PI075 P3-42 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS FEEDBACK LOOPS	0	0	0	0
PI076 P3-43 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS DRIFT SPACES	0	0	0	0
PI077 P3-44 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS BUNCHER GRIDS	0	0	0	0
PI078 P3-45 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS BUNCHER CAVITIES	0	0	0	0
PI079 P3-46 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CONTROL GRIDS	0	0	0	0
PI080 P3-47 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATHODES	0	0	0	0
PI081 P3-48 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON REPELLER (REFLECTOR) PLATES	0	0	0	0
PI082 P3-49 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON GRIDS	0	0	0	0
PI083 P3-50 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON GRID CAVITY GAPS	0	0	0	0
PI084 P3-51 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON RESONANT CAVITIES	0	0	0	0
PI085 P3-52 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON MAGNETIC COUPLING LOOPS	0	0	0	0
PI086 P3-53 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON FILAMENTS	0	0	0	0
PI087 P3-54 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON CATHODES	0	0	0	0

DY-TSK

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

UY-TSK

SPC SPC SPC SPC
076 077 078 079

P108 P3-55 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF
 REFLEX KLYSTRON OUTPUT LEADS
 P109 P3-56 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF
 TRAVELING-WAVE TUBES FILAMENTS
 P109 P3-57 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF
 TRAVELING-WAVE TUBES CATHODES
 P109 P3-58 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF
 TRAVELING-WAVE TUBES MODULATOR GRIDS
 P109 P3-59 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF
 TRAVELING-WAVE TUBES ANODES
 P109 P3-60 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF
 TRAVELING-WAVE TUBES HELIXES
 P109 P3-61 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF
 TRAVELING-WAVE TUBES COLLECTORS
 P109 P3-62 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF
 TRAVELING-WAVE TUBES MAGNETS
 P109 P3-63 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF
 TRAVELING-WAVE TUBES ATTENUATORS
 P109 P3-64 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER FERRITE
 CIRCULATORS
 P109 P3-65 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER SIGNAL
 CAVITIES
 P109 P3-66 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER IDLEM
 CAVITIES
 P110 P3-67 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER VARACTOR
 DIODES
 P110 P3-68 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER FERRITE
 ISOLATORS
 P110 P3-69 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER REVERSE-
 BIAS BATTERIES
 P110 P3-70 DO YOU PERFORM TASKS ON ANODES
 P110 P3-71 DO YOU PERFORM TASKS ON ANODE COOLING PINS
 P110 P3-72 DO YOU PERFORM TASKS ON COUPLING LOOPS
 P110 P3-73 DO YOU PERFORM TASKS ON HEATER LEADS
 P110 P3-74 DO YOU PERFORM TASKS ON RESONANT CAVITIES
 P110 P3-75 DO YOU PERFORM TASKS ON CATHODES
 P110 P3-76 DO YOU PERFORM TASKS ON MAGNETS
 Q110 Q1-01 DO YOU USE OR REFER TO STORAGE REGISTERS
 Q111 Q1-02 DO YOU USE OR REFER TO SHIFT REGISTERS
 Q112 Q1-03 DO YOU USE OR REFER TO LOGIC SYMBOLS OF SHIFT
 REGISTERS
 Q113 Q1-04 DO YOU USE OR REFER TO LOGIC SYMBOLS OF STORAGE
 REGISTERS
 Q114 Q1-05 DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF
 SHIFT REGISTERS
 Q115 Q1-06 DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF
 OTHER TYPE OF REGISTERS

REGISTERS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

UY-TSK

SPC SPC SPC SPC
076 077 078 07941116 Q1-07 DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP OF A
SHIFT REGISTER AFTER A SPECIFIED NUMBER OF SHIFT PULSES
HAVE PASSED

41117 Q2-01 DO YOU WORK WITH DIGITAL COUNTERS, REGISTERS, OR

STORAGE DEVICES IN YOUR PRESENT JOB

41118 Q2-02 DO YOU USE OR REFER TO DELAY LINES

41119 Q2-03 DO YOU USE OR REFER TO MAGNETIC CORES

41120 Q2-04 DO YOU USE OR REFER TO MAGNETIC DRUMS

41121 Q2-05 DO YOU USE OR REFER TO MAGNETIC TAPES

41122 Q2-06 DO YOU USE OR REFER TO ACCESS TIME OR SPEED OR

MEMORY SYSTEMS

41123 Q2-07 DO YOU USE OR REFER TO WORD CAPACITY OF MEMORY

SYSTEMS

41124 Q2-08 DO YOU USE OR REFER TO VOLATILITY OF MEMORY SYSTEMS

41125 Q2-09 DO YOU USE OR REFER TO LOGIC SYMBOL OF DELAY LINES

41126 Q3-01 IN YOUR PRESENT JOB, DO YOU WORK WITH DIGITAL-TO-

ANALOG (D/A) CONVERTERS, ANALOG-TO-DIGITAL (A/D)

CONVERTERS, OR BINARY-TO-DECIMAL HEADOUT CONVERTERS

41127 Q3-02 DO YOU COMPUTE OUTPUT VOLTAGES FOR ELECTROMECHANICAL

DIGITAL-TO-ANALOG (D/A) CONVERTERS FOR GIVEN INPUT

VOLTAGES

41128 Q3-03 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE

COUNT IN ELECTROMECHANICAL DIGITAL-TO-ANALOG (D/A)

CONVERTERS IS DETERMINED BY ADDING THE DENOMINATORS OF THE

RESISTORS

41129 Q3-04 DO YOU COMPUTE ANALOG VOLTAGES FOR GIVEN BINARY

COUNTS IN ELECTRONIC DIGITAL-TO-ANALOG (D/A) CONVERTERS

41130 Q3-05 DO YOU PERFORM SAMPLE FUNCTION TASKS ON VARIABLE TIME

ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS

41131 Q3-06 DO YOU PERFORM HOLD FUNCTION TASKS ON VARIABLE TIME

ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS

41132 Q3-07 DO YOU PERFORM COMPARE FUNCTION TASKS ON VARIABLE

TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS

41131 Q3-08 DO YOU PERFORM DIGITIZE FUNCTION TASKS ON VARIABLE

TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS

41134 Q3-09 DO YOU PERFORM DON'T REMEMBER WHICH FUNCTION TASKS

ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER

CIRCUITS

41135 Q3-10 DO YOU USE OR REFER TO SAMPLE FUNCTION OF A/D

CONVERTERS

41136 Q3-11 DO YOU USE OR REFER TO HOLD FUNCTION OF A/D

CONVERTERS

41137 Q3-12 DO YOU USE OR REFER TO COMPARE FUNCTION OF A/D

CONVERTERS

41138 Q3-13 DO YOU USE OR REFER TO DIGITAL FUNCTION OF A/D

CONVERTERS

41139 Q3-14 DO YOU PERFORM ANY TASKS ON MECHANICAL ANALOG-TO-

DIGITAL (A/D) CONVERTERS

STORAGE DEVICES

DIGITAL TO ANALOG CONVERTERS

TASK GROUP SUMMARY
PERCENT MEMBERS PLANNING

0Y-7SK

DY-TSK		SPC 076	SPC U77	SPC 078	SPC U79
R1140	R1-01 DO YOU WORK WITH PHANTASTRON CIRCUITRY IN YOUR PRESENT JOB	0	0	0	0
R1141	R2-01 IN YOUR PRESENT JOB DO YOU WORK WITH SCHMITT TRIGGER CIRCUITS	0	0	0	0
R1142	R2-02 DO YOU TRACE DATA FLOW THROUGH SCHMITT TRIGGER SCHEMATIC DIAGRAMS	0	0	0	0
R1143	R2-03 DO YOU USE OR REFER TO SCHMITT TRIGGER LOGIC SYMBOLS	0	0	0	0
R1144	R3-01 IN YOUR PRESENT JOB DO YOU FABRICATE MULTICONDUCTOR CABLES	16	18	8	18
R1145	R3-02 DO YOU FABRICATE COAXIAL CABLES	3	4	0	3
S1146	S1-01 IN YOUR PRESENT JOB DO YOU PERFORM ANY TASKS ON VISUAL READOUT SYSTEMS	5	5	4	6
S1147	S1-02 DO YOU PERFORM ANY TASKS ON NIXIE LIGHTS OR NIXIE LIGHT DECODER SYSTEMS	0	0	0	0
S1148	S1-03 DO YOU ANALYZE NIXIE LIGHT DECODER SYSTEMS USING BOOLEAN ALGEBRA	0	0	0	0
S1149	S2-01 DO YOU WORK WITH PHOTO TUBES IN YOUR PRESENT JOB	0	0	0	0
S1150	S3-01 IN YOUR PRESENT JOB DO YOU WORK WITH CHOPPER CIRCUITS	0	0	0	0
S1151	S3-02 DO YOU MEASURE EXCITATION FREQUENCIES	0	0	0	0
S1152	S3-03 DO YOU MEASURE VOLTAGE-CURRENT PHASE RELATIONSHIPS	0	0	0	0
S1153	S3-04 DO YOU USE OR REFER TO EXCITATION FREQUENCIES	0	0	0	0
S1154	S3-05 DO YOU USE OR REFER TO VOLTAGE-CURRENT PHASE RELATIONSHIPS	0	0	0	0
S1155	S3-06 DO YOU USE SERVOS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	0	0	0	0
S1156	S3-07 DO YOU USE DETECTORS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	0	0	0	0
S1157	S3-08 DO YOU USE ERROR SIGNAL DEVICES IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	0	0	0	0
S1158	S3-09 DO YOU USE COMPARISON CIRCUITS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	0	0	0	0
T1159	T1-01 DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH INFRARED SYSTEMS	0	0	0	0
T1160	T1-02 DO YOU INSPECT INFRARED SYSTEMS	0	0	0	0
T1161	T1-03 DO YOU CLEAN INFRARED SYSTEMS	0	0	0	0
T1162	T1-04 DO YOU ADJUST OR CALIBRATE INFRARED SYSTEMS	0	0	0	0
T1163	T1-05 DO YOU OPERATE INFRARED SYSTEMS	0	0	0	0
T1164	T1-06 DO YOU TROUBLESHOOT WIRE CONNECTIONS OF INFRARED SYSTEMS	0	0	0	0
T1165	T1-07 DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF INFRARED SYSTEMS	0	0	0	0
T1166	T1-08 DO YOU TROUBLESHOOT DOWN TO INFRARED SYSTEM COMPONENT PARTS	0	0	0	0
T1167	T1-09 DO YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF INFRARED SYSTEMS	0	0	0	0
T1168	T1-10 DO YOU REMOVE OR REPLACE INFRARED SYSTEM COMPONENT PARTS	0	0	0	0

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

	SPC 076	SPC 077	SPC 078	SPC 079
T1169 T1-11 DO YOU USE OR REFER TO FAR REGION	0	0	0	0
T1170 T1-12 DO YOU USE OR REFER TO INTERMEDIATE REGION	0	0	0	0
T1171 T1-13 DO YOU USE OR REFER TO NEAR REGION	0	0	0	0
T1172 T1-14 DO YOU USE OR REFER TO MICRON	0	0	0	0
T1173 T1-15 DO YOU USE OR REFER TO GRAY BODIES	0	0	0	0
T1174 T1-16 DO YOU USE OR REFER TO BLACK BODIES	0	0	0	0
T1175 T1-17 DO YOU USE OR REFER TO ABSORPTION	0	0	0	0
T1176 T1-18 DO YOU USE OR REFER TO SCATTERING	0	0	0	0
T1177 T1-19 DO YOU USE OR REFER TO ABSOLUTE ZERO	0	0	0	0
T1178 T1-20 DO YOU PERFORM TASKS ON BLITZ	0	0	0	0
T1179 T1-21 DO YOU PERFORM TASKS ON TARGET BUTTONS	0	0	0	0
T1180 T1-22 DO YOU PERFORM TASKS ON ERECTOR LENSES	0	0	0	0
T1181 T1-23 DO YOU PERFORM TASKS ON OCULAR LENSES	0	0	0	0
T1182 T1-24 DO YOU PERFORM TASKS ON CORRECTION LENSES	0	0	0	0
T1183 T1-25 DO YOU PERFORM TASKS ON FILTERS	0	0	0	0
T1184 T1-26 DO YOU PERFORM TASKS ON SPHERICAL MIRRORS	0	0	0	0
T1185 T1-27 DO YOU PERFORM TASKS ON PLANE MIRRORS	0	0	0	0
T1186 T2-01 DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH LASERS	0	0	0	0
T1187 T2-02 DO YOU INSPECT LASER SYSTEMS	0	0	0	0
T1188 T2-03 DO YOU CLEAN LASER SYSTEMS	0	0	0	0
T1189 T2-04 DO YOU OPERATE LASER SYSTEMS	0	0	0	0
T1190 T2-05 DO YOU OPERATE LASER SYSTEMS	0	0	0	0
T1191 T2-06 DO YOU TROUBLESHOOT WIRE CONNECTIONS OF LASER SYSTEMS	0	0	0	0
T1192 T2-07 DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF LASER SYSTEMS	0	0	0	0
T1193 T2-08 DO YOU TROUBLESHOOT TO COMPONENT PARTS OF LASER SYSTEMS	0	0	0	0
T1194 T2-09 DO YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF LASER SYSTEMS	0	0	0	0
T1195 T2-10 DO YOU REMOVE OR REPLACE COMPONENT PARTS OF LASER SYSTEMS	0	0	0	0
T1196 T2-11 DO YOU USE OR REFER TO ANGSTROMS (A)	0	0	0	0
T1197 T2-12 DO YOU USE OR REFER TO ELECTRON ENERGY LEVELS	0	0	0	0
T1198 T2-13 DO YOU USE OR REFER TO GROUND STATE	0	0	0	0
T1199 T2-14 DO YOU USE OR REFER TO EXCITED STATE	0	0	0	0
T1200 T2-15 DO YOU USE OR REFER TO PACKET OF RADIATION	0	0	0	0
T1201 T2-16 DO YOU USE OR REFER TO PHOTONS	0	0	0	0
T1202 T2-17 DO YOU USE OR REFER TO SPONTANEOUS EMISSION	0	0	0	0
T1203 T2-18 DO YOU USE OR REFER TO STIMULATED EMISSION	0	0	0	0
T1204 T2-19 DO YOU USE OR REFER TO COHERENCE OR INCOHERENCE	0	0	0	0
T1205 T2-20 DO YOU USE OR REFER TO INVERSION LEVEL	0	0	0	0
T1206 T2-21 DO YOU USE OR REFER TO MONOCHROMATIC	0	0	0	0
T1207 T2-22 DO YOU WORK WITH ACTIVE MATERIALS	0	0	0	0
T1208 T2-23 DO YOU WORK WITH PUMPING SOURCES	0	0	0	0
T1209 T2-24 DO YOU WORK WITH FULL SILVERED (100% REFLECTIVE) MIRRORS	0	0	0	0

LASERS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

SPC SPC SPC SPC
076 077 078 079

T1210 T2-25 DO YOU WORK WITH HALF SILVERED (92% REFLECTIVE) MIRRORS

T1211 T2-26 DO YOU WORK WITH HELICAL FLASHTUBES

T1212 T2-27 DO YOU WORK WITH RUBY

T1213 T2-28 DO YOU WORK WITH HELIUM-NEON

T1214 T2-29 DO YOU WORK WITH HELIUM-XENON

T1215 T2-30 DO YOU WORK WITH XENON

T1216 T2-31 DO YOU WORK WITH CESIUM-HELIUM

T1217 T2-32 DO YOU WORK WITH ARGON

T1218 T2-33 DO YOU WORK WITH NEODYMIUM IN GLASS

T1219 T2-34 DO YOU WORK WITH GALLIUM ARSENIDE

T1220 T3-01 IN YOUR PRESENT JOB DO YOU WORK WITH DISPLAY TUBES, SUCH AS DIRECT VIEW STORAGE (DVST) OR MULTIPLE MODE STORAGE TUBES (MMST)

T1221 T3-02 DO YOU INSPECT DVST OR MMST

T1222 T3-03 DO YOU CLEAN DVST OR MMST

T1223 T3-04 DO YOU ADJUST OR CALIBRATE DVST OR MMST

T1224 T3-05 DO YOU OPERATE SYSTEMS THAT CONTAIN DVST OR MMST

T1225 T3-06 DO YOU TROUBLESHOOT DVST OR MMST

T1226 T3-07 DO YOU REMOVE OR REPLACE DVST OR MMST TUBES FROM MAJOR ASSEMBLIES OR UNITS

T1227 T3-08 DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME THE VARIOUS ELEMENTS OF DVST

T1228 T3-09 DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME THE VARIOUS ELEMENTS OF MMST

T1229 T3-10 DO YOU PERFORM TASKS ON FLOOD GUNS

T1230 T3-11 DO YOU PERFORM TASKS ON WRITE GUNS

T1231 T3-12 DO YOU PERFORM TASKS ON ATTACK GUNS

T1232 T3-13 DO YOU PERFORM TASKS ON ERASE GUNS

T1233 T3-14 DO YOU PERFORM TASKS ON STORAGE GRIDS

U1234 U1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY PROGRAMMING TASKS

U1235 U1-02 DO YOU USE OR REFER TO DECIMAL SYSTEMS

U1236 U1-03 DO YOU USE OR REFER TO PROGRAMS

U1237 U1-04 DO YOU USE OR REFER TO HEXIDECIMAL SYSTEMS

U1238 U1-05 DO YOU USE OR REFER TO 8-4-2-1 SYSTEMS

U1239 U1-06 DO YOU USE OR REFER TO FOUR SYSTEMS

U1240 U1-07 DO YOU USE OR REFER TO BINARY SYSTEMS

U1241 U1-08 DO YOU USE OR REFER TO TIME-SHARING

U1242 U1-09 DO YOU USE OR REFER TO DATA WORDS

U1243 U1-10 DO YOU USE OR REFER TO ADDRESS WORDS

U1244 U1-11 DO YOU USE OR REFER TO ADDRESS/SUBADDRESS

U1245 U1-12 DO YOU USE OR REFER TO STEERING/INFORMATION

U1246 U1-13 DO YOU USE OR REFER TO INFORMATION WORDS

U1247 U1-14 DO YOU PERFORM TASKS ON SINGLE LEVEL PROGRAMMING

U1248 U1-15 DO YOU PERFORM TASKS ON MULTI-LEVEL PROGRAMMING

DISPLAY TUBES

PROGRAMMING

PCT MBRs RESPONDING 'YES' BY SELECTED GRPS

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TASK GROUP SUMMARY PERCENT MEMBERS PERFORMING

0Y-TSK

SPC SPC SPC SPC
076 077 078 079

U1249 U1-16 DO YOU PERFORM TASKS ON INPUT DEVICES
U1250 U1-17 DO YOU PERFORM TASKS ON STORAGE DEVICES
U1251 U1-18 DO YOU PERFORM TASKS ON ARITHMETIC SECTIONS
U1252 U1-19 DO YOU PERFORM TASKS ON CONTROL SECTIONS
U1253 U1-20 DO YOU PERFORM TASKS ON OUTPUT DEVICES
U1254 U1-21 DO YOU PERFORM TASKS ON POWER SUPPLIES
U1255 U2-01 DO YOU USE DECIBELS TO EXPRESS AMPLIFICATION AND
ATTENUATION
U1256 U2-02 DO YOU USE LOGARITHMS TO COMPUTE OUTPUT POWER IN
DECIBELS
U1257 U2-03 DO YOU USE LOGARITHMS TO COMPUTE ATTENUATION IN
DECIBELS
U1258 U2-04 DUMMY TASK TO IDENTIFY INCUMBENTS WHO PERFORMED
NO TASKS

10 11 8 8

3 1 8 2

DB AND POWER RATIOS

2 1 4 1

6 6 4 7

ATE
LMED
-7

AD-A044 642

AIR FORCE OCCUPATIONAL MEASUREMENT CENTER LACKLAND A--ETC F/G 5/9
TELEPHONE EQUIPMENT INSTALLER SPECIALIST, AFSC 36254.(U)
SEP 77 T J O'CONNOR, F B BOWER

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This report summarizes the results of the administration of the Electronic Principles Inventory to airmen assigned as Telephone Equipment Installer Specialist (AFSC 36254). The report gives a detailed listing of the technical tasks and knowledge needed to perform the jobs within the specialty or career ladder. 2mer CONTINUED		

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This specialty has the following functions:

Installs and maintains telephone subsets, key telephone systems, key switch systems, and associated equipment. Maintains inspection and maintenance records and completes maintenance data collection forms. Supervises telephone installation and repair specialist personnel.

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